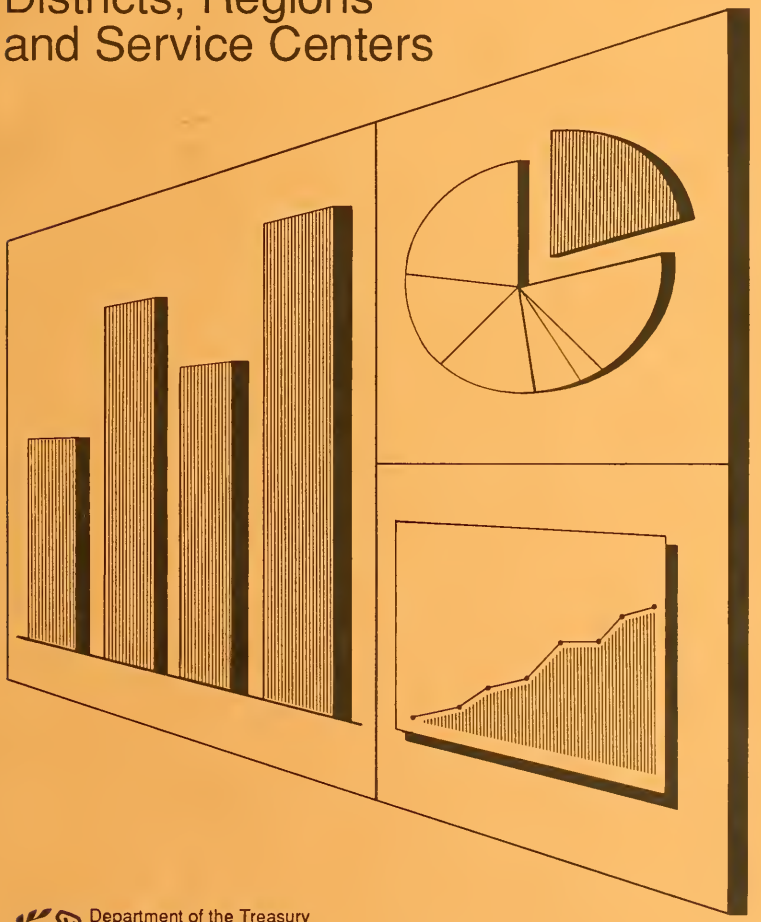
1989 Update

Trend Analyses And Related Statistics

United States, Districts, Regions and Service Centers



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1989 Update

Trend Analyses And Related Statistics

United States,
Districts, Regions
and Service Centers

Produced by the Research Division:

Roger L. Plate, Director
Gary Bingham, Assistant Director

Edited by:

James D. Swartzwelder
Chief, Projections and Forecasting Group

Carol E. Sattler
Linda C. Moore

With Special Assistance From:

Olga Perez
Stuart Simpson

Production:

Bernadette Daniels
Gregory Johnson
Alma Minor
Kelly Smith

FOREWORD

This is the last update of **Trend Analyses and Related Statistics** that will be published in the 1980s. I am therefore dedicating this 1989 Update to the three Commissioners of Internal Revenue who, at the time this was written, held that office during the 1980s:

Jerome Kurtz
Roscoe L. Egger, Jr.
Lawrence B. Gibbs

Each in his own right was a trend-setter, and each in his own way left a legacy of intelligent foresight to help guide the Service.

Jerry Kurtz saw the need to talk openly about taxpayer compliance, and he was the first with the courage to do so. The landmark study on unreported income that he released in September of 1979 set the stage for making tax compliance a major public policy issue. Roscoe Egger's tax gap studies built on this trend, and he seized the opportunities of the early 1980s to shape these concerns about voluntary compliance to help support the passage of TEFRA--the most significant compliance-oriented legislation to be passed since the early 1960s. Larry Gibbs was able to build on these foundations, to lead the Service successfully through the difficulties of planning and implementing tax reform, and, by doing so, to re-establish the reputation of the Service as an effective and capable organization.

Others will remember these Commissioners for other efforts and accomplishments--Jerry for his IRP initiatives--Roscoe for his office automation and revenue initiatives--and Larry for his emphasis on quality improvement and customer service. But we all recognized that each was a leader; each was dissatisfied with the status quo; and each emphasized the need to push for continuous change and improvement. This was their legacy, and we thank them.

As I emphasized last year, the pace of developing trends and the corresponding change needed in tax administration is accelerating. We must continue to shape this change to meet the needs of the 1990s. I hope this update will give us a better understanding of how we developed over the last decade. I also hope it will improve our perspective of where we are going and how to sense new trends and adapt to them to meet the challenges of the decade of the nineties.

John D. Johnson
Assistant Commissioner
(Planning, Finance and Research)

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SECTION I

Selected Trend Highlights:
Some Broad Trends With Implications For IRS

Demographic and Health Trends

- Florida has passed Pennsylvania as the fourth most populous state, ranking behind California, New York, and Texas, according to 1987 Census Bureau estimates. Florida's 23 percent population gain from 1980 to 1987 is the fourth largest, behind Alaska (31 percent), Nevada (26 percent), and Arizona (25 percent). The 11 fastest growers also include Texas (18 percent), California (17 percent), Utah, New Mexico, New Hampshire (15 percent), and, Colorado and Georgia (14 percent).
  (Bureau of the Census, December 30, 1987)

- The current trend, away from activities like jogging toward low-salt or low-cholesterol diets, is caused mainly by demographics. As the Baby Boomers age, "youthful" endeavors to stay fit are increasingly supplanted by greater attention to eating habits. Substantially more consumers report that they lost weight last month (24 percent) than say they gained weight (19 percent). In 1981, fully 32 percent said they had gained weight the previous month, versus 24 percent who had lost weight. Some of this progress can be attributed to the changing dietary habits of consumers. Per capita beef consumption declined by 31 percent between 1974 and 1986, and pork consumption dropped by 12 percent over the same period. Compared to 1974, the average consumer now eats 44 percent more chicken, 42 percent more turkey, and 25 percent more fish. The consumption of vegetables increased 30 percent from 1970 to 1985.
  (The Public Pulse, May 1988)

- Cohabitation is even more extensive than previously assumed. A survey, financed by the National Institute of Health and carried out by University of Wisconsin researchers, found that almost half of all Americans aged 25 to 35 have at some time lived with an individual of the opposite sex outside of marriage. Not surprisingly, younger people find the situation increasingly acceptable; whereas only 11 percent of Americans marrying between 1965 and 1974 had cohabited before their first marriage, 44 percent of those marrying between 1980 and 1984 had. Cohabiting between marriages is even more normal; 58 percent of recently remarried people have lived together.
  (The Wall Street Journal, June 14, 1988)

- Among farm residents over the age of 15, about two-thirds were married and living with a spouse compared with 56 percent of nonfarm residents. Farm women aged 18 to 44 years averaged 2.03 children each compared with 1.78 children for each nonfarm woman. Median income in 1986 was $21,655 for farm households and $23,326 for farm families, compared with $24,979 for nonfarm households and $29,632 for nonfarm families.
  (U.S Department of Commerce News, July 20, 1988)

- Here are some facets of the college marketplace worthy of note. Just as many students (61 percent) as adults own credit cards. While fewer students (61 percent) than adults own an automobile, college car owners are twice as likely to have imported cars. College students' alcohol consumption is significantly higher than the national norm. However, merely 15 percent smoked a half a pack or more of cigarettes last week--about half the national figure.
  (The Public Pulse, June 1988)

- The two Souths--the "new" one running down the Atlantic coast, and the "traditional" one at the center of the Cotton Belt--can best be understood in comparison to one another. In the New South, median household income stands at $26,000 per year--slightly above the national norm. In the the neighboring Traditional South, median income is only $17,400--the lowest of all regions in the United States. Fully 44 percent of Traditional Southerners live on less than $15,000 annually. Educational differences are also pronounced. New Southerners have strong educational backgrounds--37 percent have been to college and 21 percent have received degrees. Only 13 percent have completed college in the Traditional South.
  (USA Weekend, Vol. 1 No. 7)

- The healthiest U.S. city is Richmond, Virginia, says Health magazine, citing medical facilities, clean air, recreation areas, and low cancer rates. Six cities--Boston, Honolulu, Milwaukee, Minneapolis-St. Paul, Rochester, and Scranton/Wilkes-Barre--tied for second.
  (The Wall Street Journal, March 10, 1988)

- In a nationwide survey, the following percentages of adults said they eat: three meals a day (50 percent), two meals a day (37 percent), and no regular meals (13 percent).
  (Parents Magazine, June 1988)

- Real median income for families with a female householder, no husband present, was $14,620, an increase of 3.4 percent from 1986. It was the first significant increase for such families since 1984, and only the second increase since 1979.
  (U.S. Department of Commerce News, August 31, 1988)

- Hispanic high school and college attainment levels in 1988 were at historical highs. About half (51 percent) of Hispanics age 25 and over completed four years of high school or more in 1987 and 1988, the highest percentage ever recorded. In addition, 10 percent of Hispanics age 25 and over completed four or more years of college, also a record. However the report notes that despite these improvements, the proportion of non-Hispanics completing high school (78 percent) and college (21 percent) remained higher than that of Hispanics.
  (U.S. Department of Commerce News, September 7, 1988)

- Young people are not getting married as soon as they used to, but more people are giving marriage a try during their lives. Currently, just five percent of men and women aged 65 and older have never been married, down from eight percent in 1970. The median age at first marriage for men is now 25.9 years, up from a 20th century low of 22.5 years in the late 1950s. Median age at first marriage for women has risen to 23.6 years in 1988, from 20.1 years in 1956. This means until age 26, a majority of men are still single. Plus, over half of women have not married by their 23rd birthday.
  (American Demographics, October 1988)

- More young adults are living at home these days, an Education Department report says. In 1960, 43 percent of all 18 to 24 year olds lived at home; by 1980 the figure was up to 48.4 percent, and by 1985 it had risen to 53.6 percent.
  (The Wall Street Journal, September 16, 1988)

- A t-shirt seen in the New York suburbs announces the arrival of Yuffies--young urban failures.
  (The Wall Street Journal, July 21, 1988)

- A new Census Bureau report reveals that DEWKS (Dual Employed, With Kids) far outnumber DENKS (Dual Employed, No Kids) as the typical young family. The report, covering all married couples in which the wife is between 18 and 44 years old, shows that working couples with kids increased by 61 percent between 1976 and 1987. In contrast, the DENKS increased only 31 percent.
  (The Wall Street Journal, July 21, 1988)

- Phoenix has been the fastest growing metro area of a million or more, increasing by 30 percent from 1980 to 1987, followed by Dallas-Fort Worth at 27 percent. Among all metropolitan areas, Naples and Ocala, Florida lead in population growth since 1980, each increasing by nearly 50 percent. Seven of the 10 fastest growing areas are in Florida.
  (U.S. Department of Commerce News, September 30, 1988)

- One in seven Americans is poor today, compared with one in five in 1960. If income from food stamps and government housing subsidies enters into the calculation, then only one in 10 Americans is poor today. Blacks have suffered disproportionately from poverty in the past. They have made considerable progress over the years, leaving the ranks of the poor and joining the ranks of the middle class (33 percent black families are middle class today versus 13 percent in 1960).
  (The Futurist, July/August 1988)

- Four counties can boast the highest number of physicians per 100,000 population in 1985: Montour, Pennsylvania, 1,970; Omsted, Minnesota, 1,684; Johnson, Iowa, 1,304; and Orange, North Carolina, 1,281. All were well above the national average of 197.
  (<u>County and City Data Book, 1988</u>, Bureau of the Census)

Economic And Industrial Trends

- New York is America's most expensive corporate business city averaging $276 a day for a hotel, three meals, and a rental car, says Corporate Travel magazine. Average price for the nation's top 100 cities is $158.
  (Wall Street Journal, March 31, 1988)

- U.S. consumers pay about $10.6 billion a month on installment debt. The average monthly payment, by age of the head of household, is:

25-34	$206
35-44	$250
45-54	$274
55-64	$192
65+	$101

  (The Wall Street Journal, April 21, 1988)

- First-time home buyers are getting older and are less likely to be married. They are also relying more on two incomes to get in the front door. In 1977, the median age of first-time home buyers was 26 years. By 1987, the median had risen to 31.5 years, according to the U.S. League of Savings Institutions. In 1977, about a quarter of first-time home buyers were unmarried. By 1987, 39 percent were unmarried. And in 1977, the second income accounted for 10 percent or more of total household income among 60 percent of first-time buyers. By 1987, that figure had increased to 68 percent. The median household income of first time buyers in 1977 was $20,000. By 1987, it had risen to just over $39,000.
  (The Wall Street Journal, April 4, 1988)

- Yellow-page listings, an indicator of business start-ups and failures, show that the number of tanning salons zoomed in 1987, with listings up 55.3 percent to 17,405, according to the Yellow Page Research Group. Solar energy equipment wholesalers had the greatest decline in listings, down 47.9 percent to 2,808.
  (Wall Street Journal, April 28, 1988)

- For many basic services, Americans are giving higher marks today than in 1985 when asked how much value they get for the dollar. For example, the phone companies, both long distance and local, are the beneficiaries of major increases in consumer satisfaction. Since 1985, positive ratings have jumped 15 points (from 37 percent to 52 percent) for local service and 14 points (from 37 percent to 51 percent) for long distance.
  (Roper Reports, July 1988)

- The percentage of the public calling the Federal income tax system either quite or reasonably fair (40 percent) is up four points from 1986 and up 11 points from 1978. Those who say it is unfair have declined eight points since 1986 and 14 points since 1978. However, having experienced the first year under the 1986 Tax Reform Act, a majority of Americans (55 percent) say the reform has increased the tax burden on middle income people.
  (The Roper Reports, July 1988)

- When asked to estimate the percentage of tax filers who do not report all of their income or claim deductions they are not entitled to, the median response is that 47 percent cheat on their taxes (compared to 50 percent five years ago). But there is a big difference among age groups. Among 18-29 year olds, the median estimate is that 50 percent cheat on their taxes. Older Americans (aged 60 and above) estimate that just 30 percent cheat on their taxes.
  (The Roper Reports, July 1988)

- When the National Association of Realtors compiled its most recent ranking of 62 metropolitan areas by price of existing houses, 11 of the top 12 were on the coasts; the lone exception was Honolulu. In Orange County, California, today's hottest market measured both in terms of price and rate of appreciation, the median price for an existing home in July 1988 was $219,542. That is 140 percent above the national median price of $91,600, and up more than $15,000 since the end of the second quarter of 1988. The national median price in 1970 was $23,000.
  (U.S. News and World Report, September 19, 1988)

- Those concerned about poverty in the 1980s had better look at rural America, advises demographer William O'Hare of the Population Reference Bureau. From 1979 to 1986, he notes, real medium family incomes in rural areas fell 10 percent, compared with less than one percent in urban areas. In 1986, the rural jobless rate was 26 percent higher than in urban areas, and the poverty rate was 50 percent higher, virtually identical to the rate found in the nation's hard-pressed central cities. More than 20 percent of rural families and 25 percent of rural children live in poor households.
  (Business Week, September 12, 1988)

- A survey conducted by the Gallop Organization finds that almost half of the total contributions to charity in the U.S. come from households with incomes below $30,000. Of the 91 million households in the U.S., 71 percent contribute to charity. Last year the average contribution among those households that donated was $790.
  (The Wall Street Journal, October 19, 1988)

- The hotel industry is trying to woo women business travelers again. Hotels are eager to win over women because they make up a rapidly growing part of the business travel market and because women are more likely to stay in a pricier room. Women now represent 39 percent of all business travelers in the U.S., up from just one percent in 1970, and are expected to account for 50 percent by the year 2000.
  (The Wall Street Journal, October 14, 1988)

- Credit cards are entering the fast food market. Consumers can now pay for their fast food purchases at such eating establishments as Arby's and Wendy's. The results, though preliminary, have piqued the interest of other businesses that previously thought their customers' transactions were too small and numerous to justify the use of credit cards.
  (The Wall Street Journal, November 30, 1988)

- Until recently, the assumptions that the Midwest is benefiting disproportionately from the recent surge in exports was based more on anecdotal evidence than on any hard data. However, economists at the Federal Reserve Bank of Chicago have now compiled two indexes that compare the growth in output of Midwest manufactures with that of manufacturers nationwide. Their results show that the Midwest did indeed raise production more than the rest of the U.S. The Chicago Fed is optimistic that this trend will continue in 1988. (Business Week, April 11, 1988)

- The telemarketing industry is not a favorite with the American public. A huge 83 percent of the 115 million consumers who received a phone call from a company or organization trying to sell something in the last three months consider these calls annoying and would prefer not to get them. Hardly anyone--only three percent--think the calls are useful and informative. The last time they received a telemarketing call, 32 percent listened all the way through the sales pitch, 41 percent cut the conversation short, and 26 percent hung up immediately. Altogether, 14 percent of completed calls--or just four percent of all telemarketing calls made--resulted in actual orders. (The Roper Reports, August 1988)

International Economic Trends

- At current growth rates, over the next 20 years the work force in Third World countries will expand by about 700 million--an increase approximately equal to today's labor force in industrial countries. Mexico, Egypt, and many other countries will not generate enough jobs to employ the new workers; wages will remain depressed and the potential for economic and political instability will rise. The surge in the Third World labor force will come at a time when the population of young workers in many industrial countries, including the U.S., is stagnant or declining, creating pressure for the migration of people to developed countries and for the migration of investment and technology to countries with growing populations and low wages. (The Wall Street Journal, June 6, 1988)

- U.S. assets abroad (both public and private) increased 89 percent in real terms between 1977 and 1987. During that same period, foreign assets in the U.S. increased 208 percent in real terms. In 1977 foreign assets in the U.S. were approximately 81 percent of U.S. assets abroad. In 1987, foreign assets in the U.S. were approximately 32 percent higher than U.S. assets abroad. (U.S. Department of Commerce, Survey of Current Business, June 1988)

- Two studies by the accounting firm Kenneth Leventhal and Company reported that Japanese investment in U.S. real estate increased 70 percent in 1987 to $26.34 billion, and 63 percent in 1988 to $42.88 billion. The study estimated that new investment in U.S. real estate by the Japanese will be between $13 billion and $16 billion in 1989. Some believe that Japanese are now the largest foreign holders of American land and buildings. (Washington Post, April 7, 1988 and The Wall Street Journal, March 8, 1989)

- By 1995 the Japanese government and Japanese private investors will likely own $1 trillion, or as much as 10 percent, of all U.S. assets. (Newsweek, February 22, 1988)

- Foreign purchases of U.S. companies grew by more than 50 percent in 1987, to $38 billion, according to W.T. Grimm and Company, a Chicago research firm. Some investment bankers estimate that foreign buyers could account for as much as 20 percent of U.S. acquisitions in 1988, up sharply from five percent in 1987. (The Wall Street Journal, February 24, 1988)

- Approximately 16 percent of business net income is either generated by a U.S.-owned business operating abroad or a foreign-owned business operating in the U.S. (Affiliate data--U.S. Department of Commerce, Survey of Current Business, May 1988. U.S. business statistics data--U.S. Department of the Treasury, Internal Revenue Service, various Statistics of Income Publications)

- The vast majority of U.S.-Canadian trade already moves unrestricted between the two markets. Roughly three-quarters of U.S. imports from Canada--and the same fraction of Canada's imports from the U.S.--were not subject to tariffs. For instance, in 1985, the last year for which detailed figures are available, U.S. imports from Canada amounted to $69.6 billion, of which $19.1 billion (27.4 percent) was taxed upon entry. Canada imported $53.9 billion worth of merchandise from the U.S., $13.5 billion (25.9 percent) of which was dutiable. Now with the ratification of the Free Trade Agreement, the two nations have cut tariffs on imports and will eliminate tariffs over a 10 year period. But the ultimate impact of the agreement will be felt much less in this country than it will be north of the border.
  (Black Enterprise, February 1989)

- While the average American home covers 1,583 square feet and the typical European dwelling is more than 1,050 square feet, Japanese families make do with 925 square feet. The basic U.S. family has 2.2 cars on average; comparable households in the European Community have an average of 1.3 cars. In Japan, the average is .88 cars per household. And while food is 26 percent of the typical Japanese household's income, the number is less than 15 percent for the average American family. "Japan's middle class is not really middle-class by anyone else's standards, and it will probably never be rich by international standards," says Kimihiro Masamura, an economics professor at Senshu University in Kawasaki. "Japan's middle class is lower-class."
  (Business Week, September 12, 1988)

- Thirty-nine percent of parts used in U.S. manufacturing are from a different country of origin; 37 percent of parts used by IBM are imported.
  (The Futurist, July-August, 1988)

- Opposition to both foreign investment in the U.S. and U.S. investment abroad has grown over the past few years. Opposition to foreign investment in this country is up six points since 1986, with a 48 percent plurality now frowning on it. Meanwhile, criticism of U.S. investment abroad is up five points, with the public evenly split between the 39 percent who favor it and the 39 percent who oppose it.
  (Roper Reports, Mid-August, 1988)

- Per capita gross domestic product (GDP) growth in Japan for the 1960 to 1987 period is six percent per year. Per capita gross domestic product (GDP) growth in the U.S. for the same period is two percent per year.
  Source: U.S. Commerce Department
  (Newsweek, February 27, 1989)

- According to consultants Moran, Stahl, and Boyer, women account for only five percent of the workers sent overseas. While most companies insist that they encourage females in international careers, many still argue that women are not interested, are not qualified, or must overcome local biases if they do go.
  (The Wall Street Journal, February 14, 1989)

- The share of the world GNP in 1987 for some major economies:

U.S.	25.9 percent
European Community	22.1
Japan	9.4
West Germany	4.8
France	4.2
Britain	4.1
Italy	4.1

(The Wall Street Journal, February 13, 1989)

Workforce Trends

- Women's earnings are catching up with men's. In 1970, full-time working women aged 25 to 34 earned only 65 percent as much as young men. In 1987, young women were making 74 percent as much as their male counterparts. In contrast, full-time working women in the 55 to 64 age group earn 58 percent of what men of a similar age earn. (American Demographics, October 1988)

- Dual jobholders numbered nearly six million in 1985, accounting for 5.4 percent of all employed people, compared with 4.9 percent in 1980. Although most of these said they held two jobs to earn more money, about one in six said their purpose was to gain experience for a different type of work. (Business Week, January 18, 1988)

- Eighty-two percent of the 143 relocation administrators surveyed by Runzheimer International said that employees resist moving to high-cost cities. A third of the respondents said that the resistance to move is rising. New York was named as the least popular area by 73 percent, followed by Los Angeles, Boston, San Francisco, and Washington. (The Wall Street Journal, January 5, 1988)

- This year, 13 workers pay taxes to support each person in retirement. By the year 2000, demographers predict there will be only three workers to pay for each retiree--and one of those three workers will be black or hispanic. (U of I Chicagoan, February 1988)

- It is no secret that the number of temporary workers is skyrocketing. In August 1987, the number of workers paid by companies that supply temporary help hit the one million mark, up from 400,000 five years ago. Surprisingly, the last reason most companies cite for using temporary workers is saving money. The payoff comes in flexibility and the ability to turn the labor spigot on or off at will. Aside from the old standbys (clerical workers), temporaries now include accountants, architects, chemists, computer programmers, engineers, financial analysts, pharmacists, doctors, lawyers, and a good number of chief financial officers available by the day or the week. (Fortune, February 15, 1988)

- "Involuntary" part-time workers now account for more than six percent of the total U.S. labor force, according to the Bureau of Labor Statistics, and for one-quarter of all part-time workers, according to the Census Bureau. These are "underemployed" workers who would rather have a full-time job, but cannot find one. An AFL-CIO report noted that between 1979 and 1985, involuntary part-time jobs grew almost 10 times faster than voluntary part-time jobs. (The Utne Reader, March/April 1988)

- Service industries have accounted for an increasing proportion of the rapidly expanding employment base while jobs in goods-related industries have declined. In 1960, 37.7 percent of employees worked in goods-related industries, but by 1985, these industries accounted for only 25.5 percent of employees. The number of jobs in manufacturing has remained relatively constant since 1960, but the share of jobs in that sector has declined.
  (Executive Summary, Population Resource Center, April 27, 1988)

- The average monthly income for individuals who have earned the following:

Professional degree	$3,439
Doctoral degree	2,747
Master's degree	1,956
Bachelor's degree	1,540
Associate degree	1,188
Vocational degree	990
High-school diploma	415

  (The Wall Street Journal, March 17, 1988)

- The Department of Labor found 17,800 minors working illegally in the nine months prior to June 30, up 11 percent from the year before. That was added to a 59 percent spurt in the year prior to September 30, 1987. Much of this increase occurred in the Northeast. Demand comes from markets and fast-food outlets that illegally let 14 and 15 year-olds run meat slicers or work after 9 p.m. in the summer and 7 p.m. during the school year.
  (The Wall Street Journal, August 30, 1988)

- The number of employers who provide child-care options has increased from 110 in 1978 to 600 in 1982 to 2,500 in 1984 to 3,300 in 1988.
  (U.S. News and World Report, Sept. 19, 1988)

- In a move that underscores the changing demographics and values of the American work force, International Business Machines Corporation has announced a new program designed to help its employees balance the pressures of work and home life. The package of benefit options being offered by the company includes leaves of absence of up to three years, greater flexibility in work hours, and a chance for some employees to work at their home. The extended leave program is designed to give IBM employees more time to care for children or sick relatives, or to pursue what a spokesman described as "once-in-a-lifetime" personal opportunities. IBM's work force mirrors changes in the national employment demographics, with more working women, dual-career couples and single parents, and with individuals living longer who may want second careers.
  (The Washington Post, October 19, 1988)

- American workers rank childrens' education, family life, and health as top concerns. Of 10 options, work ranked eighth in importance and seventh in satisfaction. Europeans say that work is the fourth most important priority and the sixth most satisfying. To the Japanese, work is second only to health.
  (Government Productivity News, September 1988)

- A survey of Federal executive women, those paid from $65,994 to $77,500, reveals that nearly two-thirds have said they have been mistaken for secretaries at meetings and asked to take notes or make coffee. One-quarter feel than being a woman has hurt, rather than helped, in getting promotions.
  (Government Executive Magazine, August 1988)

- Historically, safety and health risks associated with the manufacturing industry have been higher than those for most other industries. Reflecting this, during 1987 job-related injuries and illnesses occurred at the rate of 11.9 percent in manufacturing industries, compared with 8.3 percent for private industries as a whole. Within manufacturing, injury and illness rates have been highest over the past several years in lumber and wood products, food and kindred products, and fabricated metal products.
  (Bureau of Labor Statistics News, November 15, 1988)

- Employees are covered by fewer benefits and work options today than in 1981--perhaps because more people are working for smaller companies. The biggest losses for employees have involved what traditionally have been the most common benefits: 40 percent now get free medical insurance (down from 46 percent seven years ago); 29 percent have free life insurance (down from 37 percent); and 25 percent enjoy flexible work hours (down from 32 percent). From a list of ten other benefits, a "cafeteria" benefits package (which offers a choice of benefits) is becoming more available than in 1981. This year, 17 percent of employees report having a cafeteria plan, versus 13 percent seven years ago.
  (Roper Report, November 1988)

- A surplus of physicians is likely by the year 2000, as hospital admissions and patient stays decline, and more doctors begin practicing. Some 17 percent of physicians will be on salary, up from nine percent now.
  (The Futurists, November/December 1988)

- The number of students applying to law schools was up about 17 percent in the fall semester of 1987, the first rise since 1983, said the Law School Admissions Council. Students shunned law schools between 1982 and 1987, thinking the big money was to be made on Wall Street. Now plentiful jobs, soaring legal salaries, and the October 19 stock market crash are bringing them back to law.
  (The Wall Street Journal, February 18, 1988)

- Care of children under age five whose mothers work, by place of care:

Own home	31%
Organized child-care facilities	23
Nonrelatives' home	22
Grandparents' home	10
Mother at place of work	8
Other relatives' home	5
Kindergarten or grade school	1

  (The Wall Street Journal, June 3, 1988)

- The percentage change in demand for jobs from 1986 to 2000 is estimated to be the highest for the following jobs:

Natural Scientists	46%
Technicians	38
Engineers/Architects	32
Marketing/Sales Workers	30

(Bureau of Labor Statistics, December 1988)

- Currently the trend is away from hiring MBA graduates for jobs in management information systems (MIS). Professors and placement offices at some of the top business schools do not encourage MBAs to enter MIS. Without a strong technical background, the chances of a recent graduate in MIS making a significant difference in the corporation are small. However, MBAs often move into MIS from within the organization.
(InformationWEEK, May 2, 1988)

Technology Trends

- Industry analysts predict that the software business will increase by more than 15 percent annually for the next two or three years--about twice as fast as the computer industry as a whole. The analysts attribute this boom to lower prices for both hardware and software, and strong international sales.
  (High Technology Business, April 1988)

- Advances in lasers and thin-film materials have made reusable optical disks for computers a reality. The disks will expand the storage capacity of personal computers and workstations. Verbatim's 3.5-inch removable cartridges hold more than 50 megabytes of memory on a disk, compared to just one megabyte (or about a million characters of information) on a standard, magnetic disk of the same size. The key to the optical disks' enhanced memory is vertical stacking, which allows bits of information to be stored on top of each other, rather than just side-by-side as on magnetic disks.
  (Wall Street Journal, April 1, 1988)

- Supermarkets have merged advertising with high-tech in the form of VideOcarts--shopping carts that have a video terminal built into that little basket in front of the cart. VideOcarts will flash advertisements when the carts are rolled past products whose makers have bought "cart time." The screens are supplied free to supermarkets by Information Resources Inc., which makes its money by signing up advertisers for a $100,000 minimum. VideOcarts will not only try to steer you toward given products; they will also offer store maps, recipes, sports scores, and other information.
  (InformationWEEK, August 8, 1988)

- The newest trend in technology for your car is the new Laptop Car Seat from Zirco Inc. This handy item securely holds valuable laptop computers in a usable position in a car.
  (InformationWEEK, September 12, 1988)

- Sharp's eight-ounce "pocket PC" is designed as a hand-held organizer. It has been in production since 1987, but has been available only in Japan. The "Wizard" will have seven basic functions, including an appointment diary, a 200-year calendar, a 600-entry phone directory, a notepad function that stores up to 16 pages of typed information, a calculator, and world and local clocks. "Smart cards" containing time-budgeting software, a thesaurus/dictionary, and a language translator are also available.
  (Byte, January 1989)

- An add-on for personal computers claims it can help beginners quickly master software programs such as Lotus 1-2-3 and Multimate Advantage. The Simplifier is a 9- by 11-inch console with 35 keys that users plug into the personal computer's keyboard. It has special cartridges that use artificial intelligence to interpret the complex commands required by some software programs.
  (The Wall Street Journal, June 23, 1988)

- Computer chips are going three-dimensional. Semiconductor companies have been talking for years about plans to run circuits throughout a silicon block rather than just atop a silicon wafer. Going 3-D would allow for faster and more complex chips, but the intricacies of developing such chips have frustrated previous attempts. Chip specialists say that the chips will be restricted to specialized applications that require heavy-duty number crunching.
  (The Wall Street Journal, June 7, 1988)

- The satellite market in the U.S. is expected to jump 13.4 percent per year to $9.8 billion by 1995, according to a study done by the Freedonia Group, a Cleveland market research company. Many giant organizations such as First Union National Bank of Charlotte, N.C., Chrysler Corporation, and K-Mart are turning to satellites as a cost-saving, convenient solution to data communication problems.
  (InformationWEEK, April 4, 1988)

- One of the major trends of 1988 will center around enhancements and new product releases. One such example is the trend toward 3.5-inch microfloppy disks that will affect users by the million. The continuing problems of data loss of 5.25-inch minifloppy disks, the greater capacity of the 3.5-inch disks and the marketing muscle of the growing number of system vendors selling 3.5-inch-based machines have gradually nudged the newer format toward widespread acceptance. By offering only 3.5-inch drives on its Personal System/2 microcomputers, IBM gave the movement enormous impetus.
  (InformationWEEK, January 4, 1988)

- First there were floppy disks--flexible magnetic platters for recording computer data. Then came optical disks, which use light beams and lenses to store and read information. Now there is the Floptical disk system, a hybrid device that combines attributes of both its predecessors and gives disks 25 times the capacity of a conventional floppy. It will become available later this year. One of the primary uses of Floptical disks will be to store large programs.
  (The Wall Street Journal, September 12, 1988)

- PC component vendors and analysts anticipate that after several years of heavy expansion, sales growth will slow in 1989. Overall unit sales, which rose by 84 percent in 1987 and 23.5 percent in 1988, will climb only about 10 percent in 1989, according to an analyst for International Data Corporation. The industry simply could not be expected to maintain its pace. Additionally, multiple unit buyers (who account for about 60 percent of PC shipments) are lengthening purchase cycles in order to come to grips with the extensive technology changes now under way. Bright spots amid the general slowdown are portable computers and PCs sold into the work-at-home market.
  (PC World, February 1989)

- One company says it has found a way to develop a portable personal computer that is used more like a notepad. The company, Linus Technologies Inc. of Reston, Virginia, calls its machine a write-top. Instead of using a keyboard, the user writes on a glass screen with a stylus. Linus's machine can convert handwriting into typed text, which can be printed out or transferred to another computer. First you need to enter your handwriting into the machine, so it can understand your graphological quirks. However, the machine has some limitations. You have to pick up the stylus between characters. Also, the machine converts handwriting at the sluggish pace of two symbols per second. And at $2,800 to $3,600, it will cost more than most conventional portable PCs.
  (The Wall Street Journal, July 12, 1988)

- Now when you charge something in an East Coast Rickels Home Center, you do not spend as much time waiting for the card authorization to go through. Expanding the network to increase transmission speed would have cost more than to change to the new high-speed satellite system. GTE Spacenet's Skystar Network Services creates a batch-data link among Spacenet's New York shared hub, each site in the store chain, and the Rickles' headquarters in New Jersey. Spacenet provides satellite capacity and an earth-station network, while Telenet provides switching equipment and network control.
  (Communication News, March 1989)

- The Food and Drug Administration recently approved a hand-held computer that enables diabetics to adjust their insulin dosages easily. The diabetic feeds the required data into the device and lets it do the math. The computer also houses a communications device, so a physician can reprogram it over the telephone with a new insulin dosage formula.
  (The Wall Street Journal, December 2, 1988)

SECTION II

Trend Articles

The views expressed in the articles contained in this document represent the opinions and conclusions of the authors. Such views do not necessarily represent the position of the Internal Revenue Service.

Trends in the Voluntary Compliance of Taxpayers Who File Individual Income Tax Returns

by
Richard J. Fratanduono
and
Gabriella A. Bucci
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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Results from the recently completed individual TCMP survey (tax year (TY) 1985 returns) show a small decrease in overall voluntary compliance below TY 1982. However, the current compliance level remains above the TY 1979 level. The estimated dollar amount of tax underpayments grew by $6.8 billion from 1982 to 1985 and $8.9 billion from 1979 to 1985. The principal reasons for the decline in compliance were: (1) the change in tax brackets and rates from 1982 and 1985 that effectively reduced taxes over the period; (2) the redistribution of taxpayers among tax brackets; and, (3) the change in the average taxable income of taxpayers among income classes. To a lesser extent, compliance fell due to increased overreporting of child and dependent care tax credits and increased underreporting of self-employment taxes.

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Background [1]

The Taxpayer Compliance Measurement Program (TCMP) was developed in 1962 to measure taxpayer compliance by comparing what a random sample of taxpayers report on their returns with what IRS examiners determine should have been reported on those same returns. TCMP surveys provide evaluative and planning data, and are an integral part of the enforcement program of the Service. TCMP surveys represent the only IRS enforcement program in which taxpayers are randomly selected for examination.

Individual TCMP surveys measure the accuracy of returns and determine the total additional tax that would have been recommended by IRS examiners if all filers were examined. The first individual TCMP survey measured the accuracy of TY 1963 returns filed in 1964 by examining 92,000 randomly selected returns. The ninth individual survey, which was completed in the fall of 1988, determined the accuracy of TY 1985 returns filed in 1986 by examining a random stratified sample of just under 50,000 returns. Advances in statistical sampling techniques over this period have enabled the Service to reduce tne sample size by nearly 50 percent without reducing the reliability of the estimates.

Over the years, the Service has used data from individual TCMP surveys to develop and maintain discriminant function (DIF) formulas. These formulas are developed following each survey and are the basis for IRS' computerized examination selection system for individual

income tax returns. TCMP data are also the primary tool used to develop IRS estimates of the U.S. tax gap. Note that TCMP data are representative of tax return filers, whereas tax gap estimates include data on filers and nonfilers as well as other information. Hence, the compliance estimates presented in this article are not comparable to IRS tax gap estimates.[2]

Estimates of Voluntary Compliance Levels

The TY 1985 individual TCMP survey results show that the voluntary compliance level (VCL) decreased from 92.2 percent in 1982 to 91.5 percent. VCL is calculated by dividing tax reported by the total of tax reported and tax understated (overstatements of tax are not included).[3] The data in Table 1 show that, while compliance dropped from 1982 to 1985, it remains above the 1979 level. These data also show that total estimated tax understatement grew $6.8 billion from 1982 to 1985 and $8.9 billion from 1979 to 1985. The level of noncompliance, also shown in Table 1, is calculated by subtracting the VCL from 100. This measure shows the pattern of change in noncompliance over time. With the exception of 1965, noncompliance increased steadily from 1963 to 1979, fell in 1982, then rose again in 1985.

Table 1. Individual Income Tax Voluntary Compliance Levels (VCL) and Estimated Tax Understatement (as Measured by TCMP) [4]

Tax Year	VCL (Percent)	Noncompliance Level (100-VCL) (Percent)	Estimated Tax Understatement (Billions)
1963	93.0	7.0	$3.2
1965	93.8	6.2	$3.0
1969	92.9	7.1	$5.9
1973	92.4	7.6	$8.3
1976	91.9	8.1	$11.8
1979	91.1	8.9	$21.4
1982	92.2	7.8	$23.5
1985	91.5	8.5	$30.3

Table 2 shows compliance levels by IRS Examination Classes for TY 1982 and TY 1985. The largest declines in voluntary compliance were found in Classes 2,6 and 7. Examination Classes 8 and, to a lesser extent, 5 and 10 exhibited increases in voluntary compliance between the two years. This is a continuation of a trend started in 1979, in which compliance has increased in the highest income classes (i.e., Examination Classes 5,8 and 10) and, with one exception, decreased in all others.[5]

Table 2. Voluntary Compliance Levels (VCL) Using New VCL and Examination Class Definitions for TY 1982 and TY 1985 Individual Income Tax Returns (as Measured by TCMP)*

Examination Classes	*VCLs*		
	Tax Year 1985	Tax Year 1982	Difference
Grand Total	91.5	92.2	-0.7
Nonbusiness Total	93.1	93.6	-0.4
1) TPI** Under $25,000, 1040A Type	92.4	93.1	-0.7
2) TPI Under $25,000, Non-1040A Type	85.6	89.8	-4.1
3) TPI $25,000 - Under $50,000	92.8	94.6	-1.8
4) TPI $50,000 - Under $100,000	94.7	94.6	0.1
5) TPI $100,000 and Over	95.3	93.7	1.5
Business Total	76.5	75.7	0.8
6) TGR** Under $25,000, Schedule C	60.8	65.6	-4.8
7) TGR $25,000 - Under $100,000, Schedule C	71.0	74.7	-3.6
8) TGR $100,000 and Over, Schedule C	81.8	77.8	4.0
9) TGR Under $100,000, Schedule F	75.1	75.2	-0.1
10) TGR $100,000 and Over, Schedule F	82.3	81.7	0.7

$$* \text{ Voluntary Compliance Level (VCL)} = \frac{\text{Tax Reported}}{\text{Tax Reported + Tax Understated}} \times 100$$

The original VCL definition included penalties. The original number of Examination classes was reduced from 11 in prior Individual TCMP surveys to the current number of 10. For comparative purposes, the results shown above for TY 1982 were reformatted using the current Examination class definitions.

** Total Positive Income (TPI) is defined as the sum of all income amounts greater than zero (i.e., excluding loss amounts). Total Gross Receipts (TGR) is defined as the sum of all receipts on business and farm tax return schedules.

Figure 1. Tax Reported and Tax Understated
(From Individual TCMP Surveys)

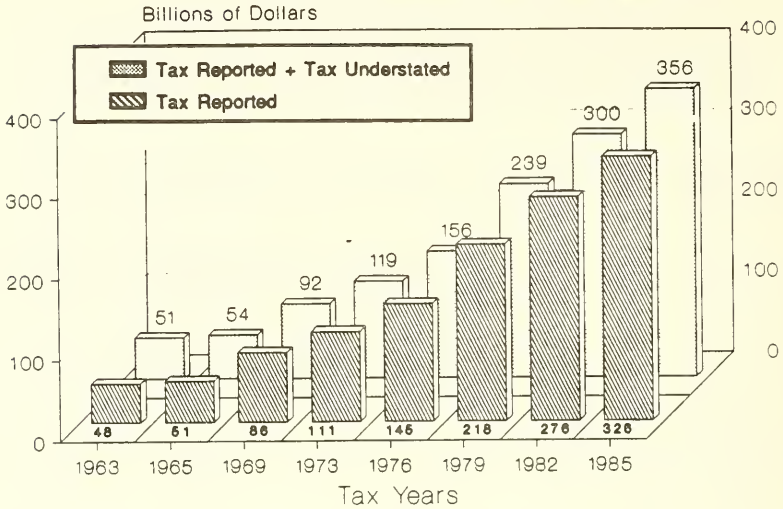


Figure 1 depicts the rapid growth in the amount of voluntarily reported tax since the first individual TCMP survey in 1963. Note that the difference in bar heights in Figure 1 provides a pictorial representation of the growth in estimated tax understatement shown in Table 1.

In general, a decline in overall compliance, as measured by the drop in VCL from 1982 to 1985, should be accompanied by a deterioration in taxpayers' reporting behavior. One way to measure reporting accuracy is to calculate voluntary reporting percentages (VRP) for income tax return line items. The VRP for a given line item is simply the ratio of the dollar amount voluntarily reported by taxpayers to the dollar amount that should have been reported for that item (as determined by TCMP examinations).

Table 3 provides VRPs for the four major line item categories: Total Income, Statutory Adjustments, Itemized Deductions and Exemptions. Note that a decline in VRP for categories such as Statutory Adjustments and Deductions, which are subtractions from total income, reflects an improvement in compliance. Conversely, a decline in VRP for Total Income indicates a decrease in compliance.

Table 3. Voluntary Reporting Percentages for Selected Line Items

	1985	1982
Total Income	97.0	96.9
Statutory Adjustments	104.5	106.1
Itemized Deductions	104.1	105.5
Exemptions	104.7	104.4

The data presented in Table 3 show that the only major line item category for which voluntary compliance declined from 1982 to 1985 was Exemptions. However, the decline is so small that it represents virtually no change in compliance. The decline in VRP for Statutory Adjustments and Itemized Deductions, and the small increase in VRP for Total Income, indicate that reporting in these categories actually improved or changed very little from 1982 to 1985. Consequently, the behavior of the VRPs for the major line items is not consistent with the decline in overall compliance suggested by the decline in VCL.

Factors Affecting the VCL

Since the decline in VCL could not be explained by decreases in taxpayers' reporting of the four major line items, our research focused on other factors that may have contributed to the drop in VCL. Our analysis indicates that most of the drop in the VCL was caused by changes in the tax code (which changed the number of tax brackets and tax rates), a redistribution of taxpayers into higher income tax brackets and an increase in the average amount of taxable income from 1982 to 1985. Only about 30 percent of the decline in the VCL can be explained by a deterioration in compliance. Consequently, reporting compliance changed very little between 1982 and 1985.

In order to determine why the VCL fell between 1982 and 1985, it is necessary to understand the possible sources of change in the VCL measurement. The VCL is calculated as

$$\text{VCL} = \frac{\text{tax reported}}{\text{tax reported} + \text{tax understated}} \times 100$$

Tax reported depends on both the average tax rate and reported taxable income. Tax understatement depends on the understatement of taxable income and the marginal tax rate applicable to that income. It is important to note that the marginal tax rate applied to additional taxable income is higher than the average tax rate that is used to calculate tax on reported income.

When comparing VCLs across TCMP surveys, changes in both taxpayers' reporting behavior and the growth and definition of taxable income affect the VCL. Changes in the tax code that affect average and marginal tax rates also can alter VCLs over time. Therefore, it is necessary to separate the proportion of the change in the VCL brought about by income growth and changes in the tax code from that brought about by changes in taxpayers' reporting behavior.

Technical Factors

Between 1982 and 1985 there were two factors related to the tax code and taxpayers' income distribution that affected the VCL:

(1) **As a result of the Economic Recovery Tax Act (ERTA), the number of tax brackets increased and marginal tax rates fell.** To determine the effect of these changes on the VCL, we applied the 1985 tax rates to the 1982 TCMP data and recalculated the 1982 VCL. This permitted us to hold the reporting of income, deductions,

adjustments and exemptions at 1982 levels, thereby isolating the effect of the change in tax brackets and rates on the VCL. Our results show that the VCL fell.

(2) **Due to income growth between 1982 and 1985, there was a general shift of taxpayers into higher income tax brackets. In addition, the average amount of taxable income within brackets increased.** To isolate the effect of the redistribution of taxpayers into higher income tax brackets, we redistributed taxpayers on the 1982 TCMP data file into tax brackets according to the 1985 distribution. We also adjusted the average amount of taxable income within each of the brackets to reflect the increase that took place between 1982 and 1985. Thus, we calculated the VCL that would have resulted in 1982 if the income distribution, in terms of both the proportion of taxpayers in each bracket and their average taxable income, were equal to that in 1985. Our results indicate that the VCL fell.

We also measured the combined effects of these two factors on the VCL. Our conclusion is that approximately 70 percent of the decline in VCL from 1982 to 1985 is attributed to the change in tax rates and brackets combined with both the redistribution of taxpayers into higher tax brackets and the change in the average amount of taxable income.

Compliance Factors

The remaining portion of the decline in VCL from 1982 to 1985 primarily can be explained by changes in both the rules governing reporting and in the reporting of self-employment taxes and tax credits.

(1) **Self-Employment Taxes** - From 1982 to 1985, there were two major changes in the rules governing self-employment taxes. First, the maximum amount of income subject to self-employment tax increased from $32,400 to $39,600. Second, the tax rate on self-employment income rose from 9.35 percent in 1982 to 11.8 percent in 1985. Thus, both the tax base and the tax rate increased. Accordingly, the amount of self employment tax reported by taxpayers increased by $4.4 million across the two surveys. However, the VRP for self-employment taxes was 2.4 percent lower in 1985 compared to the 1982 VRP. This combination of events accounted for nearly 15 percent of the decline in the overall VCL from 1982 to 1985.

(2) **Tax Credits** - Taxpayers reported 11.4 percent more tax credits than they were entitled to in 1985. This is compared to the 5.5 percent overreporting rate experienced in 1982. Increased overreporting in this area primarily was caused by a deterioration in the reporting of child and dependent care tax credits. Taxpayers overreported child and dependent care credits by 41.1 percent in 1985 compared to 21.7 percent in 1982. This deterioration in reporting may have been due to a change in reporting requirements for claiming the credit. In 1982, taxpayers were required to list the names and addresses of all persons to whom payments were made. However, that requirement was rescinded for 1983 and beyond so that in 1985, taxpayers no longer had to list their care providers. (Beginning in TY 1989, names, addresses and SSNs of persons to whom payments are made will again be required.) Our

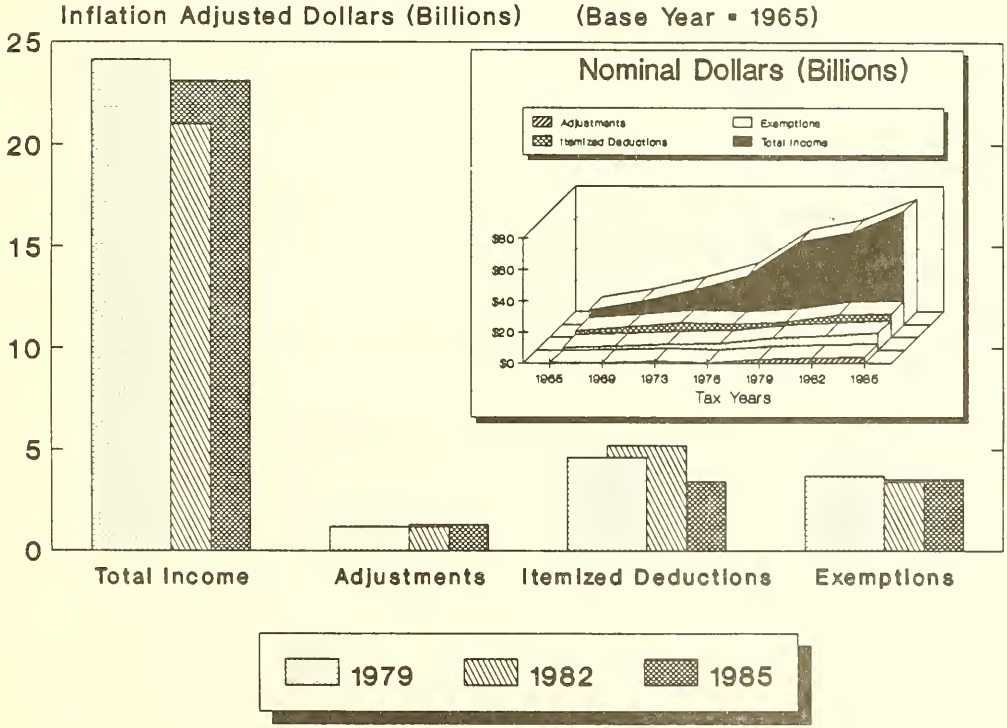
analysis indicates that increased overreporting of tax credits accounted for roughly 15 percent of the decline in the VCL.

The Components of Compliance

A Macro View

Much of the recent increase in the absolute dollar amount of misreporting has been a result of inflation. Figure 2 shows the inflation adjusted amounts of misreporting for major line item categories over the three most recent TCMP surveys and nominal (nonadjusted) misreporting for these items since 1965. The inflation adjusted amounts show that misreporting has remained fairly stable across line items since 1979. However, the nominal growth of misreporting, particularly in the Total Income area, has been large. Therefore, while inflation adjusted misreporting remained fairly constant from 1979 to 1985, there is nonetheless a significant amount of misreporting found in TCMP examinations.[6]

Figure 2. Inflation Adjusted and Nominal Amounts of Misreported Income, Adjustments, Deductions and Exemptions



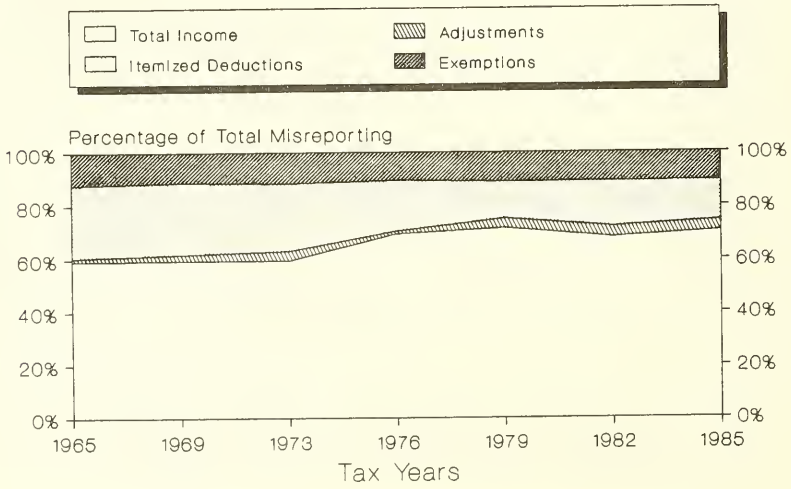
Total misreporting is defined as the sum of overreported income amounts and underreported adjustment, deduction, and exemption amounts. The amount of total misreporting, expressed in 1965 dollars, increased from $15.5 billion to $32.7 billion. However nominal misreporting increased from $15.5 billion in 1965 to $102.3 billion in 1985.

Table 4. Absolute Dollar Amounts of Misreporting for Major Line Item Categories. (Billion Dollars)

Year	Total Misreporting	Total Income	Adjustments	Itemized Deductions	Exemptions
1965	15.5	9.2	0.2	4.2	1.9
1969	24.9	14.8	0.6	6.7	2.8
1973	37.2	22.1	1.4	9.4	4.3
1976	44.7	31.0	0.5	8.5	4.7
1979	73.6	52.7	2.7	10.0	8.2
1982	86.3	58.8	3.5	14.6	9.4
1985	102.3	72.2	4.0	15.1	11.0

While taxpayers' reporting behavior changed very little over the past two Individual TCMP surveys, a substantial amount of noncompliance continues to exist in the United States. Table 4 shows the nominal dollar difference between the amounts taxpayers reported on their returns (per return) and the TCMP estimates of the amounts that should have been reported (per exam), by major line item categories, for every TCMP survey since 1965. These estimates show that the total

Figure 3. Proportion of Misreporting by Component
(Income, Adjustments, Deductions and Exemptions)



dollar amount of misreporting, as measured by TCMP examinations, has grown from $15.5 billion in 1965 to $102.3 billion in 1985. Since 1979, total misreporting has increased by 39 percent, mirroring the 37 percent growth in underreported Total Income.

The largest component of misreporting has been in the Total Income category. Since 1976, underreported income has consistently accounted for around 70 percent of total misreporting. Figure 3 focuses on the proportion of total misreporting attributed to each of the four major line item components since the 1965 TCMP survey. The relative proportions of Adjustments and Exemptions has remained stable over the years. However, a significant shift away from misreporting in the Itemized Deductions area toward the Total Income area occurred in 1976. Total Income jumped from about 60 percent of total misreporting to nearly 70 percent.

A Micro View

In this section, trends in taxpayers' reporting of the four major line item components and key sub-items within each major item are discussed. Table 5 provides data for these items based on the TY 1982 and TY 1985 TCMP surveys.[7]

Total Income

In 1985, taxpayers underreported their income by 3.0 percent, which is virtually unchanged from the 3.1 percent underreporting of 1982 (i.e., the VRP increased from 96.9 percent in 1982 to 97.0 percent in 1985). Nevertheless, underreported Total Income increased from $58.8 billion to $72.2 billion. Of this $14.4 billion increase, underreported Schedule C income accounted for $9.4 billion.

The increase in underreported Schedule C income was not caused by a decline in compliance. The VRP actually increased from 67.6 percent in 1982 to 70.5 percent in 1985. Rather, the sheer increase in the amount of Schedule C type income earned in the U.S. from 1982 to 1985 was the cause. Typically, sole proprietor businesses suffer during recessions; and 1982 was a recession year. In this case, the amount of Schedule C income earned in the U.S. decreased from 1979 to 1982. Conversely, 1985 was a boom year (i.e., it was the third year of economic expansion with strong GNP growth). In this type of economic climate, sole proprietor businesses usually flourish. In this case, Schedule C earnings grew by nearly 53 percent from 1982 to 1985. Therefore, while compliance increased in this area proportionately, the increased base of Schedule C income caused the $9.4 billion of underreporting.

The same explanation is applicable in the case of wage income. Though the VRP for wages remained at 99.9 percent, underreported wage income increased by nearly $1 billion because of the increase in the base amount of wages earned. Interest and dividend income reporting compliance increased proportionately in terms of both VRP (which increased from 96.9 percent to 98.2 percent) and amount of underreporting (i.e., a $2.4 billion decrease). There was

Table 5. Per Return and Per Exam Amounts and VRPs for Selected Items from the TY 1985 and 1982 Individual TCMP Surveys (Amounts Rounded to Billions)

	TY 1985				TY 1982			
	PER RETURN	PER EXAM	AMOUNT DIFFERENCE	VRP*	PER RETURN	PER EXAM	AMOUNT DIFFERENCE	VRP*
Total Income	$2,327.1	$2,399.3	($72.2)	97.0	$1,853.4	$1,912.2	($58.8)	96.9
Wages	$1,859.9	$1,862.6	($2.7)	99.9	$1,493.0	$1,494.8	($1.8)	99.9
Other	$467.2	$536.8	($69.6)	87.0	$360.4	$417.3	($56.9)	86.4
Interest and Dividends	$218.8	$222.9	($4.1)	98.2	$204.2	$210.7	($6.5)	96.9
Schedule C	$79.7	$113.1	($33.4)	70.5	$50.0	$74.0	($24.0)	67.6
Forms 1065 and 1120S	$3.2	$4.5	($1.3)	71.1	($2.0)	$0.9	($2.9)	**
Schedule F	($9.8)	($4.3)	($5.5)	**	($10.4)	($5.4)	($5.0)	**
Statutory Adjustments	$92.7	$88.7	$4.0	104.5	$60.5	$57.0	$3.5	106.1
Business Expenses	$15.9	$12.6	$3.3	126.2	$14.1	$10.9	$3.2	129.4
Itemized Deductions	$386.0	$370.9	$15.1	104.1	$281.6	$267.0	$14.6	105.5
Medical	$21.7	$18.8	$2.9	115.4	$22.6	$20.0	$2.6	113.0
Taxes	$123.8	$122.9	$0.9	100.7	$85.9	$83.9	$2.0	102.4
Interest	$173.0	$170.6	$2.4	101.4	$121.3	$117.8	$3.5	103.0
Contributions	$43.0	$38.9	$4.1	110.5	$33.1	$30.1	$3.0	110.0
Other	$23.2	$19.3	$3.9	120.2	$18.7	$15.2	$3.5	123.0
Exemptions	$243.7	$232.7	$11.0	104.7	$222.6	$213.2	$9.4	104.4
Children at Home	$69.7	$61.6	$8.1	113.2	$68.1	$60.1	$8.0	113.3

* Voluntary reporting percentage (VRP) is defined as the proportion of what should have been reported that actually was reported. VRPs are computed by dividing per return amounts by per exam amounts.

** VRP is not defined for loss amounts.

little change in the reporting of Schedule F type income.

Perhaps the most interesting changes in taxpayers' reporting behavior have occurred in the partnership and S-corporation area. Between 1969 and 1979, reporting of net profits from partnerships and S-corporations grew at an average annual rate of almost seven percent. At the same time, reporting of net losses grew at an average annual rate of approximately 15 percent. Therefore, total reported net earnings were fairly stable during this period. In 1980 and 1981, net earnings fell sharply because net losses reported increased by 37 percent and 61 percent respectively, while reported net profits increased by only six percent and one percent. Part of the increase in net losses reported in 1981 is attributable to provisions of ERTA that permitted both accelerated depreciation of assets and the sale of losses from one business entity to another. However, this does not explain the increased net losses reported in 1980. The bulk of the increase probably resulted from increased taxpayer awareness of the use of partnerships as potential shelters for taxable income. Taxpayers had an incentive to participate in partnerships that experienced losses and, thereby, reduced their taxes.

Although the IRS had formed task forces to study and combat tax shelters in the mid-1970s, and Congress had enacted a provision to limit partnership losses, participation in partnerships continued to grow. By TY 1985, the IRS had devoted significant resources to uncovering and challenging illegal tax shelters. In addition, Congress was finalizing discussions on tightening "loopholes" and eliminating tax avoidance schemes that would eventually be included in the Tax Reform Act (TRA) of 1986. Our conclusion is that the economic and tax law climates, along with the enforcement activities of the Service in 1986 (the year TY 1985 returns are filed), caused the shift toward increased earnings and compliance. Given the TRA changes and the continued strength in the economy, we hypothesize that the results of the TY 1988 TCMP survey will show a continued trend toward increased income reporting and compliance in this area.

Statutory Adjustments

Taxpayers overreported their statutory adjustments to income by 4.5 percent in 1985, down from 6.1 percent in 1982. Overreporting in this area increased by $0.5 billion from 1982 to 1985. While compliance improved in the reporting of business expenses, taxpayers still overreported 26.2 percent of these business write-offs. Of the $4.0 billion of total overreported adjustments, $3.3 billion was in the business expenses area.

Itemized Deductions

There was little change in taxpayers' reporting of Itemized Deductions from 1982 to 1985. They overreported 4.1 percent of their deductions in 1985, down from 5.5 percent in 1982. The dollar amount of overreported deductions increased by only 3.4 percent, or $0.5 billion. Compliance in the areas of reporting deductions for taxes, interest and "other" improved slightly,

while compliance declined somewhat in the reporting of medical and contributions deductions.

Exemptions

Reporting compliance for Exemptions decreased in 1985. Taxpayers overreported 4.7 percent of the dollar amount of their exemptions, up from 4.4 percent in 1982. The dollar amount of overreported exemptions increased by $1.6 billion, from $9.4 billion to $11.0 billion. The largest component of this overreporting continues to be in the reporting of exemptions for children who live at home. However, compliance with regard to this item has remained virtually unchanged. Overreporting increased by only $0.1 billion, while the VRP improved from 113.3 to 113.2. In 1982, overreported exemptions in the children at home category comprised 85.0 percent of the total amount of overreported exemptions. That percentage decreased to 73.6 in 1985. Hence, the relative importance of the noncompliance in this item compared to total noncompliance with regard to Exemptions has declined.

Notes and References

1. **Taxpayer Compliance Measurement Handbook**, Document 6457, Internal Revenue Service, Revised September 1984, pp. 1-3.

2. For a detailed treatment of IRS tax gap estimates, see **Income Tax Compliance Research, Gross Tax Gap Estimates and Projections for 1973-1992**, Publication 7285, Internal Revenue Service.

3. In the past, the VCL calculation included penalties. However, penalties increased significantly from 1982 and 1985, primarily as a result of the enactment of new penalties (e.g., substantial understatement of tax) and the strengthening of existing penalties by TEFRA. This increase distorted the VCL. Therefore, to express taxpayer compliance more consistently, the VCL calculation was redefined to exclude penalties. Official use of all previously published VCLs should be discontinued and replaced with the VCLs reported in this article.

4. In 1976, a test was conducted to measure the value of information return transcripts in uncovering unreported income. Test results suggested that if all examiners had been provided with IRP transcripts, the extra unreported income that would have been uncovered would have caused the VCL for 1976 to decline from 92.5 percent to 91.9 percent. Beginning with the 1979 individual TCMP survey, examiners were provided with IRP transcripts. Therefore, VCLs for 1976 and prior surveys have been reduced by 0.6 percent to make them comparable with the VCLs for the past three surveys.

5. Fratanduono, Richard J. "Trends in Voluntary Compliance of Taxpayers Filing Individual Tax Returns," **Trend Analysis and Related Statistics**, Document 6011, Internal Revenue Service, Revised March 1986, pp. 17-18.

6. Changes in the Personal Consumption Expenditure (PCE) Deflator for the years 1965 through 1985 were used as a proxy for inflation over the period. Historical data for the PCE Deflator were developed by the Bureau of Economic Analysis (BEA).

7. See Fratanduono, pp. 21-22, for additional historical data.

Trends in the Refund Offset Program

by
Alicia Fadell and Timmie McArthur
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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As mandated by Congress, the Internal Revenue Service has implemented a refund offset program to collect nontax delinquent debts owed either to the Federal government (e.g., student loans) or to families receiving child/spousal support payments. Under this program, the IRS offsets a debtor's Federal income tax refund to fully or partially cover the obligation. This article examines trends developing as a result of the program, with particular emphasis on short-term trends in taxpayer compliance behavior.

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Introduction

The Omnibus Reconciliation Act of 1981 authorized the IRS to collect past-due child and spousal support payments by offsetting any Federal income tax refund payable to taxpayers with this type of debt. The initial program, which began in tax year 1981 (TY81), was designed to collect support debts owed to families receiving Aid to Families with Dependent Children (AFDC). Subsequent legislation, the Child Support Enforcement Amendments of 1984, expanded the offset program to include all child and spousal support debts, independent of whether the family was receiving assistance through the AFDC program. This extension was initiated with TY85 offsets.

The Deficit Reduction Act of 1984 required the IRS to extend the refund offset program to other nontax debts owed to Federal departments and agencies. The Act also authorized the Secretary of Treasury to test the offset procedures with selected programs. Testing began with cases offset for TY85 and included five Federal departments and agencies: Department of Education, Small Business Administration, Department of Housing and Urban Development, Department of Agriculture, and Veterans Administration.

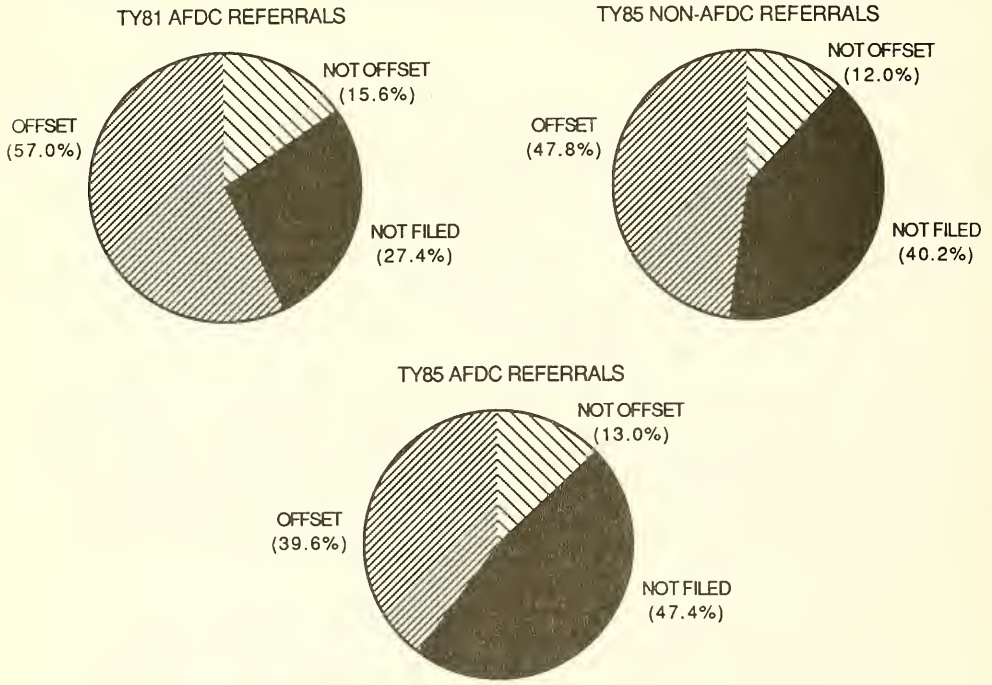
Agencies which participate in the refund offset program may request offsets for certified nontax debts to the Federal government if, after attempting to notify the debtor, the debtor does not dispute the debt, has not begun to repay the debt, and exhibits no intention to repay the debt. Each referring agency creates a computer tape (listing the debtors and the amount of the debt) which is processed by the IRS and compiled in the Debtor Master File (DMF). In addition to creating the DMF, the IRS places a freeze code on each debtor's account to prevent payment of tax refunds until the referred amount is offset. A freeze code is reversed as the debt is paid by offset or removed at the end of the year even if the debt has not been paid. It is the agency's responsibility to resubmit the referral if there is still an outstanding debt the following year.

This article analyzes the filing patterns of taxpayers who were referred through one or more of the refund offset programs. For the purpose of this analysis, these individuals were separated into three groups: the TY81 AFDC referrals, the TY85 non-AFDC referrals, and the TY85 AFDC referrals.

DMF Referrals

When the refund offset program began in TY81, the AFDC program submitted the names of 465,535 taxpayers to the IRS for refund offset. Of these taxpayers, 57.0 percent actually had a refund offset. The IRS was unable to process an offset for the remaining taxpayers because they either did not file a return for TY81 (27.4 percent) or they filed a return but were not due a refund (15.6 percent). (See Figure 1 below.)

Figure 1. Classification of Referrals in the Base Year



With the expansion of the refund offset program four years later, 573,168 non-AFDC delinquent debtors were referred to the IRS. Of these individuals, 47.8 percent had refunds that were offset. Many of these referred taxpayers (40.2 percent) did not file a return for TY85, while 12.0 percent filed a balance due or full paid return.

The AFDC program continued to participate in the refund offset program between TY81 and TY85. In TY85, it referred 1,143,136 taxpayers to the IRS. Only 39.6 percent of these cases resulted in a refund offset. Almost half of these referred taxpayers (47.4 percent) did not file a return that year [1], while 13.0 percent filed but were not due a refund.

As shown in Figure 1, a larger percentage of referred taxpayers failed to file a tax return in TY85 than in TY81. A possible explanation is that the individuals referred in TY85 consistently may have been a less compliant group than their TY81 counterparts. This explanation seems plausible when comparing the TY85 AFDC referrals with the TY81 AFDC referrals. Many of the TY85 AFDC debtors had been referred in the past. They may have stopped filing returns as a result of these previous referrals so that their compliance rates worsened prior to TY85. On the other hand, this theory does not explain the behavior of the TY85 non-AFDC debtors who, in general, did not have previous referrals.

A more likely reason for the difference between the nonfiling rates of the individuals referred in TY81 and those referred in TY85 is that, for TY85, the agencies gave delinquent debtors advance notice of their intent to submit names to the IRS for possible refund offset. This notification process was not in effect during TY81. Hence, more debtors were aware of the refund offset program in TY85 and may have chosen not to file a tax return that year, in an attempt to prevent the offset.

It appears that the referral itself, or even the threat of referral, causes adverse taxpayer behavior. Unfortunately, it is very difficult to measure the impact of the referral. Ideally, the debtors would have been divided into two groups. One group, the test group, would have been referred for refund offsets while the other group, the control group, would not have been referred. A comparison of the filing behavior of these two groups over time would then enable the IRS to estimate the compliance effects of all aspects of the refund offset program. However, the IRS could not exempt a group of delinquent debtors from the referral process without violating the principle of equitable enforcement of the law.

DMF Offsets

Approach

Due to the infeasibility of acquiring an ideal control group, the IRS had to devise an alternative control group. This group was to be selected to reflect the tax characteristics of the referred debtors (e.g., filing status and taxable income). However, the IRS did not have current tax data for those referred individuals who did not file tax returns in the year of referral. As a result, the IRS altered the focus of its study.

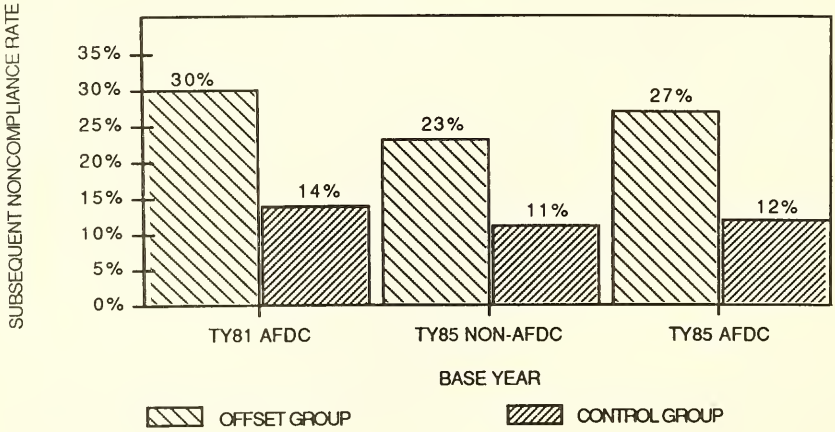
The IRS decided to focus instead on the compliance effect of the actual offset. Individuals who were referred and offset were selected to form the test groups. Besides filing tax returns in the year of referral, these individuals were due refunds. Accordingly, a control

group was selected for each base year (TY81 and TY85) from the population of taxpayers who filed refund returns that year, were not subject to any type of offset, and had tax characteristics comparable to those of the offset group (i.e., the test group). The control group was used to estimate the normal filing patterns of the individuals in the offset group.

Increase in Noncompliance

To analyze the impact of the offset on subsequent taxpayer behavior, the filing and payment patterns of the control and offset groups were examined in the year after offset. In comparison to the control groups, the offset groups consistently exhibited greater noncompliance, where noncompliance is defined as either not filing a tax return [2] or filing a balance due return (i.e., filing a return without remitting the entire tax liability). As indicated in Figure 2, 30 percent of those offset in TY81 became noncompliant in TY82, but only 14 percent of the control group exhibited noncompliant behavior [3]. Similarly, the noncompliance levels for the taxpayers with refund offsets in TY85 were more than twice as high as the levels for the corresponding control groups. Twenty-three percent of the taxpayers with a TY85 non-AFDC refund offset were noncompliant in TY86, compared to 11 percent for the control group. The noncompliance rates for the TY85 AFDC offset group and its associated control group were 27 percent and 12 percent, respectively.

Figure 2. Noncompliance Rates in the Year Following the Base Year



An analysis of noncompliance by each of its components (i.e., nonfiling and balance due filing) reveals similar results. Figure 3 indicates that, in the year following the base year, the offset groups consistently filed a greater percentage of balance due returns than the taxpayers in the control groups. The balance due cases are significant because they represent an actual amount that is owed to the government and not paid. This situation indicates that, in addition

to having a nontax debt with a Federal agency, the offset taxpayers now have a tax debt. Furthermore, Figure 4 shows that the taxpayers in the offset groups had proportionately more nonfilers in the year after the base year than the taxpayers in the corresponding control groups.

Figure 3. Balance Due Rates in the Year Following the Base Year

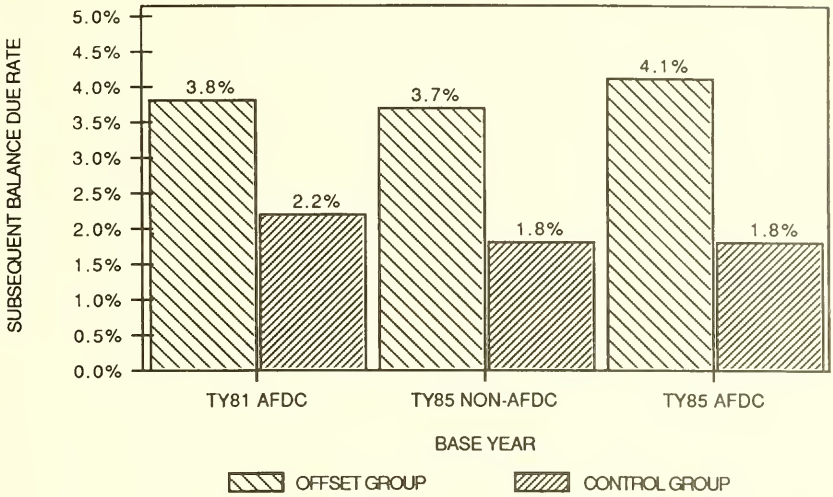
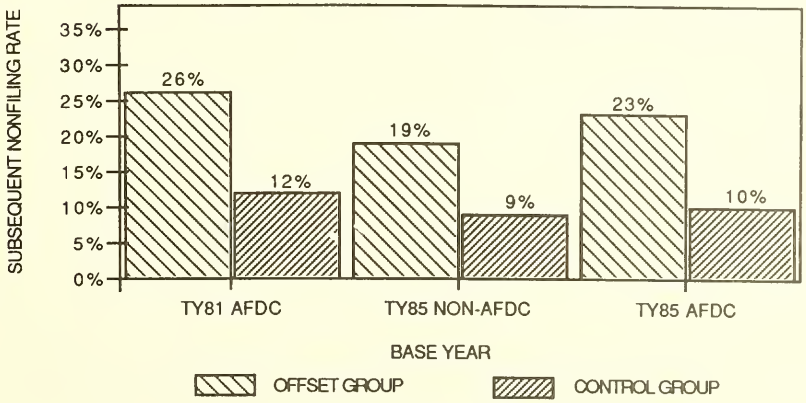


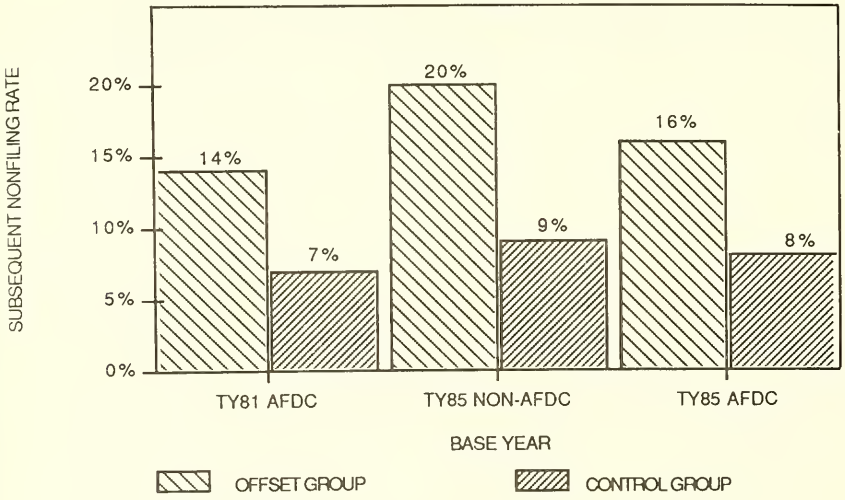
Figure 4. Nonfiling Rates in the Year Following the Base Year



Historic Filing Patterns

To examine if the nonfiling actually was influenced by the offsets, a four year analysis of the filing patterns of the TY81 and TY85 offset and control groups was performed. For this analysis, the only cases considered were those individuals who had filed in the base year and the two prior years. Of the TY81 AFDC offset individuals who exhibited this historical pattern of filing, 14 percent did not file a TY82 return. This nonfiler rate compares to 7 percent for the historical filers within the control group. A similar trend was found for those who were offset in TY85. After filing in the base year and the two prior years, 20 percent of the TY85 non-AFDC offset group failed to file a TY86 return, while 9 percent of their counterparts in the control group did not file in TY86. The corresponding nonfiler rates for the TY85 AFDC offset group and its control group were 16 percent and 8 percent, respectively. It appears that the nonfiling by the offset groups was influenced by the offsets. Figure 5 below presents these results.

Figure 5. Nonfiling Rates for Individuals Filing in the Base Year and Two Prior Years



Success of the Refund Offset Program

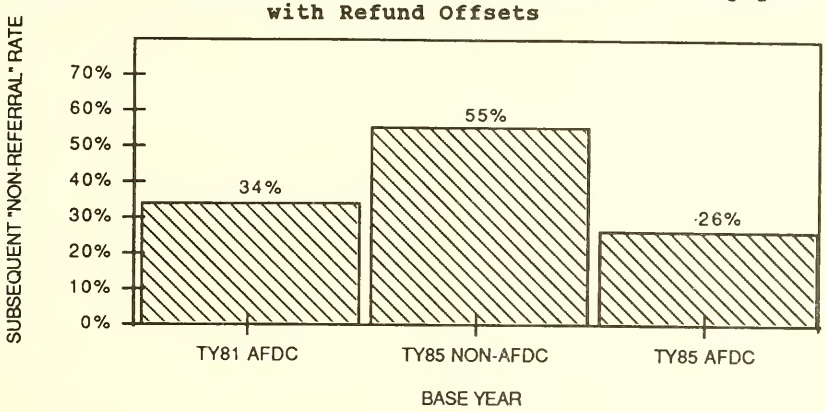
A measure of the success of the refund offset program is the percentage of taxpayers who either satisfy their debts or begin to pay back their debts voluntarily as a result of the program. Since the taxpayers' accounts contain the offset amounts but not the referral amounts, it was not possible to determine which offset amounts satisfied the debts. (Note: For this study, the data was collected from the taxpayers' accounts on the Individual Master File but not

from the Debtor Master File to which the referral amounts are posted.) Further, the taxpayer accounts do not indicate which taxpayers made voluntary payments directly to the agencies to avoid additional refund offsets in the future.

An approximate measure of the success of the program is the percentage of offset taxpayers who are not referred again for offset in the subsequent year. Obviously, individuals who have satisfied their debts will not be referred again. In addition, the legislation mandates that individuals who make an attempt to pay back their debts voluntarily cannot be referred.

An analysis of subsequent year referrals indicates that the refund offset program was more successful when applied to the non-AFDC cases. For TY85, 273,911 non-AFDC referrals resulted in refund offsets and, of these cases, 55 percent were not referred again in the following year. For the AFDC cases, the subsequent "non-referral" rates were much lower. The TY81 AFDC referrals led to offsets for 265,603 taxpayers where 34 percent of these individuals were not referred again in TY82. Finally, 453,363 debtors were offset for the AFDC program in TY85 and 26 percent of them were not referred again in TY86. (See Figure 6.)

Figure 6. Subsequent Year "Non-Referrals" for Taxpayers with Refund Offsets



One possible reason for the lower success rate of the program for AFDC cases is the recurring nature of child and spousal support debts. Because support debts have accrued over time, these debts are more difficult for an individual to repay. For every month that a parent fails to make a child support payment, the amount of the delinquent debt increases. An individual may be unable to make past-due payments in addition to the current month's obligation. On the other hand, a debtor who fails to make a payment on other types of debts (e.g., student loans) will not be increasing the principal amount of the debt, but only the relatively small amount of interest. Although some of the non-AFDC debtors owed support payments, most of them had nonrecurring Federal debts and were not accruing larger debts.

Conclusions

The data imply that the refund offset program unfavorably affects voluntary taxpayer compliance. When compared to general refund taxpayers, individuals who were referred and offset were less likely to file or to remit the entire amount of the tax liability with their next return. This trend holds for taxpayers experiencing either AFDC or non-AFDC refund offsets. In addition, the refund offset program is more successful in furthering the debt collection efforts of non-AFDC programs than of the AFDC program.

The IRS has invested substantial effort in the implementation of the refund offset program. As a result, millions of dollars in delinquent debts have been collected and returned to Federal agencies. Although this debt collection approach has merit, there are other public policy objectives to consider. As the Federal agency charged with achieving the highest possible degree of voluntary taxpayer compliance, the IRS is concerned that the refund offset program may have a long-term detrimental impact on compliance. In particular, the U.S. Treasury may be losing tax revenues as a result of an increasing number of delinquent tax debts.

The Family Support Act of 1988 has extended the refund offset program through January 1994. The IRS will continue to assist in this debt collection effort. At the same time, the Service will continue to monitor the offset populations to determine the long-term effects of this program on taxpayer compliance.

Notes and References

1. The nonfiling rates for the referral groups are much higher than the nonfiling rate for the general taxpayer population. Since the referral population is not representative of the general taxpayer population, this difference in levels of nonfiling is not unexpected.

2. There are two types of nonfiling: delinquent nonfiling, defined as not filing a return despite a legal obligation to do so, and legitimate nonfiling, defined as not filing because no legal obligation exists in this case. Hence, the act of not filing a return is not necessarily a compliance problem. For this study, however, the available data were insufficient to differentiate between legitimate nonfilers and delinquent nonfilers. Since the control groups were chosen to reflect the income characteristics of the offset groups, the legitimate nonfiling rates for the control and offset groups should be comparable. A difference in the nonfiling rates between the groups can then be attributed to delinquent nonfiling which is a compliance problem.

3. The noncompliance levels in the control groups were used to estimate the proportion of the offset taxpayers who would normally be expected to be noncompliant. Since the control groups were not intended to represent the entire U.S. taxpayer population, these rates do not reflect the noncompliance levels of the taxpayer population in general.

Trends in Taxpayer Paperwork Burden*

by
James T. Iocozzia
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)
and
Garrick R. Shear
Tax Forms and Publications Division
Office of the Assistant Commissioner
(Taxpayer Service and Returns Processing)

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This article presents new estimates of the paperwork burden imposed on taxpayers by Federal tax reporting requirements. These estimates of taxpayer paperwork burden were calculated for tax year (TY) 1983 through TY 1987 using a newly-developed model. For TY 1987, an analysis was conducted to show the effects of the Tax Reform Act of 1986. Not surprisingly, the total burden did increase--from 4.9 billion hours in TY 1986 to 5.1 billion hours in TY 1987. However, excluding the one-time burden associated with the Form W-4 series (Withholding Certificates), the new methodology reveals that individual taxpayers spent less time working on their TY 1987 returns (1.6 billion hours) than they spent on their TY 1986 returns (1.7 billion hours). The Form 1040 series returns and Schedules A through F accounted for most of this 100 million hour reduction. This finding suggests that the overall paperwork burden of individual taxpayers has been reduced as a result of the Tax Reform Act of 1986.

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Introduction

In keeping with the President's initiative to reduce paperwork burden, the IRS undertook a major, state-of-the-art effort to more accurately measure taxpayers' burden in complying with Federal tax requirements. The IRS contracted with Arthur D. Little, Inc., to develop a methodology for estimating the paperwork burden of the Federal tax reporting system and to gather the data necessary to produce the estimates. In addition to the development of yearly estimates, the Service will use the methodology to focus efforts towards the simplification of tax forms and instructions.

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* The authors would like to acknowledge Mr. Fred Riley (Research Division) for providing the filing data for this article.

The legal definition of paperwork burden, as described in the Paperwork Reduction Act of 1980, is very comprehensive. The Act describes a range of activities--from recordkeeping, obtaining advice and reading instructions, through completing and filing the return--which comprise the paperwork burden incurred by taxpayers. Certain of these activities, such as recordkeeping and obtaining advice, were not included under the IRS' previous burden measurement methodology.

The data to construct the burden models for individual taxpayers were obtained from two national taxpayer surveys, both conducted in 1984. In the first survey, a diary study, approximately 750 individual taxpayers were asked to keep track daily of the time they spent completing their 1983 Federal income tax returns. For the second survey, a questionnaire was mailed to a random sample of some 6,200 individual taxpayers nationwide. The questionnaire was designed to find out how much time taxpayers spent performing various activities in order to prepare their 1983 Federal income tax returns.

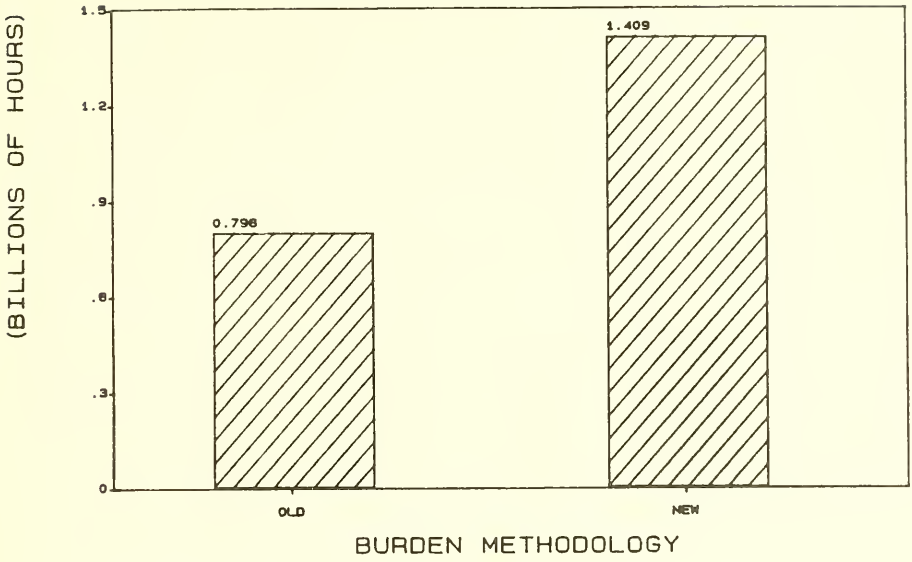
Business taxpayers provided burden data in a third survey, which also was conducted in 1984. Some 4,000 partnerships and corporations and their paid tax preparers were surveyed by mail questionnaire to determine how much time they spent performing activities undertaken for the express purpose of meeting their tax filing requirements. This survey data was used to construct the burden models for businesses.

The new methodology allows the IRS to measure burden for individual and business taxpayer populations for each of the major taxpayer paperwork activities. (All taxpayers who are not individuals, married couples, trusts, or estates are, in general, considered to be business taxpayers). These burden models permit the IRS to estimate the burden for any year, past or future, based on the characteristics of the forms and instructions, as well as the populations of taxpayers using those forms.

Burden Estimate -- Old vs. New

Under the new methodology, the estimate of burden associated with forms preparation for both individuals and businesses in TY 1986 is calculated to be 1.4 billion hours--roughly twice the estimate of 0.8 billion hours measured under the old method (see Figure 1). This increase is largely due to the improved methodology, including the use of taxpayer surveys to collect the basic estimates of time spent to prepare returns. In addition, the new methodology allows for the measurement of burden associated with other taxpayer paperwork activities, e.g., recordkeeping. For TY 1986, the burden estimate for these other activities, for both individuals and businesses, is 3.5 billion hours. This portion of the burden has not been measured before and, hence, cannot be compared to estimates based on the old methodology.

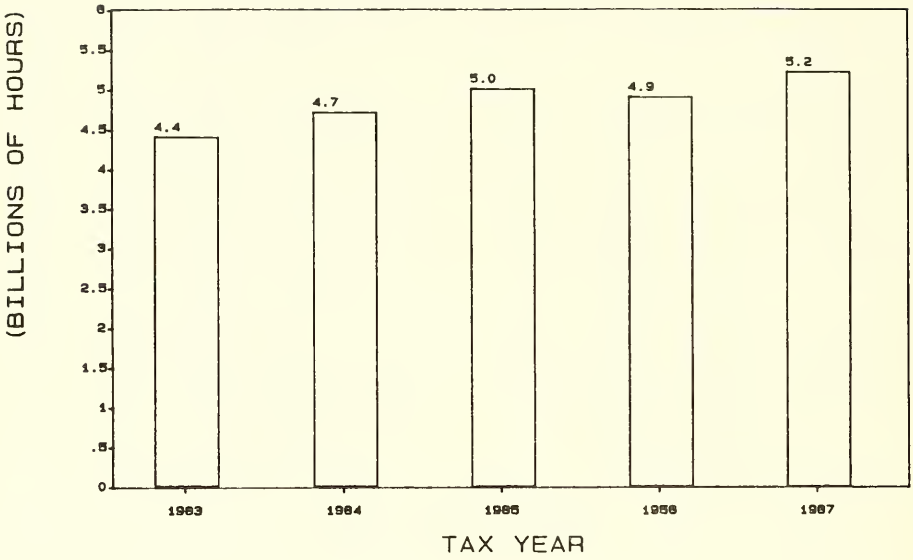
FIGURE 1. TOTAL PREPARATION TIME IN TAX YEAR 1986



Trends in Total Taxpayer Paperwork Burden

Figure 2 shows the total taxpayer paperwork burden imposed on the public in complying with Federal reporting requirements for TY 1983 through TY 1987. In TY 1983, taxpayers spent 4.4 billion hours on their taxes. This number grew to 4.7 billion hours by TY 1984, representing a 7 percent increase. Over 85 percent of this 300 million hour increase was incurred by business taxpayers. Although the creation of the two page Form 1120-A (U.S. Short-Form Corporation Income Tax Return) significantly reduced the burden for small corporations in TY 1984, revisions and additions to the Internal Revenue Code required by the Tax Reform Act of 1984 and the Deficit Reduction Act of 1984 more than offset this reduction. For TY 1985, the growth in burden hours continued at about the same rate to 5.0 billion hours, representing a 6 percent increase. A small part of this increase was due to the creation of various new forms, e.g., Form 8283 (Noncash Charitable Contributions), Form 8332 (Release of Claim to Exemption for Child of Divorced or Separated Parents) and Form 8300 (Report of Cash Payments over $10,000 Received in a Trade or Business). Most of the increase, however, related to existing forms, and was due in part to a growth in the number of filers.

FIGURE 2. TOTAL TAXPAYER BURDEN BY TAX YEAR



In TY 1986, however, the total taxpayer burden dropped to 4.9 billion hours, a 2 percent decrease from TY 1985. Most of this reduction was realized by businesses. The repeal of the investment credit eliminated the need for over 4 million business taxpayers to file Form 3468. In addition, the sharp decline in the oil industry significantly reduced the number of Form 6248 (Annual Information Return on Windfall Profits Tax) filers from roughly 4 million in TY 1985 to less than 10,000 in TY 1986. By comparison, individual taxpayers, in total, spent about the same amount of time on their tax returns for TY 1986 as they did for TY 1985. The new tax provisions created under the Tax Reform Act of 1986 did not take effect until after TY 1986. Between TY 1986 and TY 1987, the total burden for all taxpayers grew to 5.2 billion hours. This 6 percent increase was due primarily to the one-time burden increase for Form W-4 filers.

As shown in Figure 3, the composition of the total taxpayer burden has not changed significantly between TY 1983 and TY 1987. While the exact percentage varies from year to year, businesses have consistently accounted for between 63 and 66 percent of the total burden.

FIGURE 3. TOTAL TAXPAYER BURDEN BY TYPE

Trends in Burden by Activity

A closer look at the total taxpayer paperwork burden by activity reveals that recordkeeping and form preparation are, by far, the two most burdensome activities for taxpayers. Some of the activities included in recordkeeping are: identifying, annotating, saving, creating, or filing records specifically for Federal income tax purposes; and calling, writing, or making trips to get records of expenses and income, such as doctors' receipts, Forms W-2, etc. Some of the major activities included in preparing the returns are: organizing and reviewing records; reading the instructions; making calculations; filling out forms and schedules; and checking the return for accuracy. As shown in Table 1, for TY 1983, taxpayers spent 2.3 billion hours (53 percent of the 4.4 billion hour total) keeping records for Federal income tax filing requirements. An additional 1.2 billion hours (28 percent) were spent preparing tax returns in TY 1983. By TY 1987, the total taxpayer burden had grown to about 5.2 billion hours. Recordkeeping accounted for roughly 2.5 billion hours (48 percent), while preparing returns accounted for approximately 1.6 billion hours (31 percent) of this total.

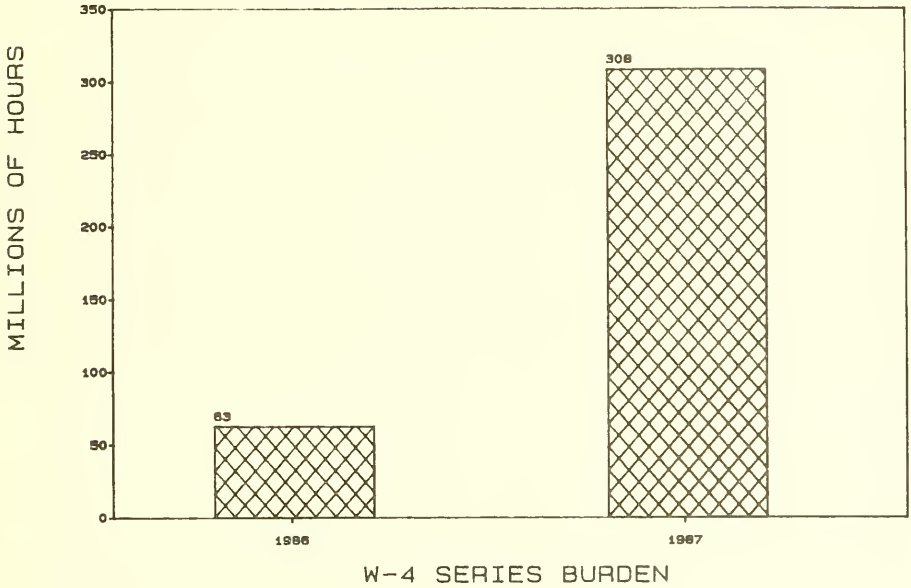
Table 1. Total Taxpayer Paperwork Burden By Activity
Tax Years 1983 to 1987 (Burden in Millions of Hours)

Activity	Tax Year				
	1983	1984	1985	1986	1987
Recordkeeping	2,309 (53%)	2,412 (51%)	2,504 (50%)	2,524 (51%)	2,485 (48%)
Learning/Getting Advice	391 (9)	446 (10)	485 (10)	419 (8)	471 (9)
Obtaining Materials	98 (2)	101 (2)	115 (2)	128 (3)	142 (3)
Finding and Using Preparer	151 (3)	159 (3)	180 (3)	192 (4)	211 (4)
Preparing	1,221 (28)	1,381 (29)	1,482 (30)	1,409 (29)	1,572 (31)
Sending	211 (5)	215 (5)	238 (5)	244 (5)	278 (5)
Total	4,382 (100)	4,714 (100)	5,004 (100)	4,916 (100)	5,159 (100)

Impact of Tax Reform

Between TY 1986 and TY 1987 (the first tax year to be affected by the Tax Reform Act of 1986), the total taxpayer paperwork burden increased approximately 240 million hours, from 4.92 billion hours to 5.16 billion hours. However, an analysis of this increase by type of form reveals that the Form W-4 series accounted for most of this increase (see Figure 4). Further analysis, excluding the one-time burden increase associated with the Form W-4 series, shows that individual taxpayers spent less time working on their TY 1987 returns (1.6 billion hours) than they spent on their TY 1986 returns (1.7 billion hours). Changes related to the Form 1040 series returns and Schedules A through F accounted for most of this 100 million hour reduction. For example, the Tax Reform Act of 1986 raised the standard deduction and limited several itemized deductions. As a result, there was a reduction in the number of filers of Schedule A (Itemized Deductions). Further reduction was realized with the repeal of income averaging (Schedule G) and the deduction for married couples when both work (Schedule W). These findings suggest that the overall paperwork burden of individual taxpayers has been reduced as a result of the Tax Reform Act of 1986.

FIGURE 4. TOTAL W-4 SERIES BURDEN BY TAX YEAR



Conclusion

As measured by a new methodology, total taxpayer paperwork burden grew about 18 percent between TY 1983 and TY 1987. However, this growth is slowing and, in the case of individual taxpayers, the burden actually decreased between TY 1986 and TY 1987 (if the one-time burden associated with the Form W-4 series is excluded). Due to the complexity of the tax laws, simplifying tax forms is not an easy job. However, based on the information provided by the new methodology for burden measurement, the Service will target those tax forms and instructions most in need of simplification, and work to further reduce the time taxpayers spend on their returns.

The Quality Revolution and Organizational Change

by
Bill Pruiett
Planning Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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Over the next ten years the U.S. labor force will grow more slowly than at any time since the 1930's, and the workers entering the labor force will have lower skill levels than the preceding generation. At the same time it is expected that the number of new jobs and the skills required to fill those jobs will increase substantially. These opposing trends will not only create challenges for employers who need to hire and retain qualified employees, but will also give young people entering the labor force and the aging baby boomers a great deal of influence over the environment and the organizational structures in which they work. An examination of the twin movements toward quality of production of goods and services and quality of working life may provide insight into the impact of these environmental trends on organizations of the future.

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Trends

Experts tell us that the U.S. population is getting older, and the pool from which future workers will be drawn is growing more slowly than at any time since the 1930's. There is also evidence of a general decline in the skill levels of young people entering the work force. At the same time there are predictions that (1) the U.S. will continue to create new jobs in the 1990's at nearly the same rate as the 1980's and (2) that the skills needed to get those jobs will continue to rise. These opposing trends will likely mean that there will not be enough qualified applicants to fill available jobs in the 1990's.

The slow growth and aging of the workforce will result in greater power and influence for individual workers. One result may be that the 1990's will be characterized by wage and benefit inflation. More and more, workers will be demanding well-paying, meaningful, and satisfying jobs with flexible working arrangements so they can enjoy more leisure time pursuits.

These and other indicators suggest that employers of the future will face greater competition for skilled workers. In the decade after the year 2000, the advance guard of baby boomers will be old enough to retire. As they near retirement age, pressure will be felt by employers to find innovative ways to keep these valuable workers.

These demographic and workforce trends will impact the Federal government even more than the private sector. The Federal workforce is older and more highly educated, on average, than the rest of the workforce. In many parts of the country, Federal pay and benefits are competitive with private industry, but continuing budget deficits are sure to lead to further erosion of that position. One of the major

Federal benefits, the ability of workers to retire earlier than their private sector counterparts, coupled with the advancing age of the Federal workforce, will make the task of replacing workers more urgent. As the baby boomers begin retiring at the end of the next decade, it will be even more difficult for Federal managers to replace those skilled workers if present trends continue.

Challenges

To become more competitive in the marketplace and in recruiting and retaining skilled and motivated workers, many companies are moving towards:

- organizing the workforce to produce quality goods and services; and,

- enhancing the quality of work life for employees.

These two movements embody the quality revolution that swept Japan in the last two decades and is now getting a foothold in the United States. Companies are using a variety of techniques to make quality happen. We will look at two of those techniques, Quality Function Deployment and Sociotechnical Systems Design, to gain some insight into how they can help employers compete in what is sure to become the hottest arena in the 1990's -- the recruitment and retention of skilled and motivated workers. Organizations of the future will have to undergo fundamental change to meet the challenges posed by a slow growing, aging and less skilled labor force.

Quality Function Deployment

In recent years consumers have been more vocal in their demands for products that meet their needs and are reliable. The Japanese have been largely responsible for raising consumer expectations of quality, but their reputation was not always so stellar. In the 1950's "Made in Japan" meant "cheap" and "unreliable" to most American consumers. But even as they were producing some of the world's worst goods in terms of quality and reliability, the Japanese were studying with the world's foremost experts on quality. By the early 1970's, Company-wide Quality Control (CWQC) and its key component, Quality Function Deployment (QFD), were firmly entrenched in Japanese business strategy.

Quality Function Deployment was first put into practice at Mitsubishi's Kobe shipyards in 1972 and quickly spread to other Japanese companies. In recent years several American companies, such as Digital Equipment, Bell Labs, Proctor and Gamble, and the major auto makers have adopted the principles of QFD. The roots for QFD can be traced to the early efforts of Dr. Joseph Juran and W. Edwards Deming, the quality experts who had been working with the Japanese since the early 1950's.

L. P. Sullivan (**Quality Progress**, 1986) defines Quality Function Deployment as:

> an overall concept that provides a means of translating customer requirements into the appropriate technical

> requirements for each stage of product development and production (i.e., marketing strategies, planning, product design and engineering, prototype evaluation, production process development, production, sales). This concept is further broken down into "product quality deployment" and "deployment of the quality function."

Sullivan defines Product Quality Deployment as "activities needed to translate the voice of the customer into counterpart (or critical final product control) characteristics" and Deployment of the Quality Function as:

> activities needed to assure that customer-required quality is achieved; the assignment of specific quality responsibilities to specific departments. (The phrase "quality function" does not refer to the quality department, but rather to any activity needed to assure that quality is achieved, no matter which department performs the activity.)

Robert King (**National Productivity Review**, 1987) defines Quality Function Deployment more simply as "a system to allow all employees in the organization to participate in the design of new products." This simple definition has its limitations, but, as we will see, it reveals a lot about the strategy for implementing QFD.

The important elements of QFD are the tools (quality tables and matrices) used to establish, translate, and assign customer requirements to critical product (or service) control characteristics. The concept behind QFD, as reflected in King's definition, is the reliance on the worker "to participate in the design of new (and existing) products." QFD is successful because employees must work closely with customers in order to employ its tools. QFD works best when it is practiced in a work environment in which the employee is trained to perform up to expectations, is empowered to work for the customer's best interests, and is accountable for the end product. Training, empowerment, and accountability are all part of new organizational models that many American companies are now adopting.

Sociotechnical Systems Design

Long before industrialization and the assembly line, there were craftsmen who provided goods and services to individual customers according to their exact specifications. The craftsman did everything -- advertising, taking orders, design, production, customer service. The craftsman was totally responsible for product and service quality. If an inferior product was made, the craftsman knew the buyer would go elsewhere in the future.

The industrial revolution changed all of that. In the early part of this century the principles of scientific management prevailed. Most factories and other work settings were organized in assembly line fashion. Jobs were broken down into their smallest components. Workers were selected for their potential to perform a component task. They were trained exclusively to perform that task, and most workers did not know

much about the tasks performed by other workers on the assembly line. Management assumed the role of planning and supporting the work activities, and the workers were required to merely execute the instructions they were given.

Scientific management worked well for a long time. But by the 1950's, work systems designers began to see the problems inherent in factories and offices organized according to scientific management principles. Uninteresting jobs and a feeling of being disconnected from the final output were reflections of some of the problems, and invariably, the result was poor quality.

Today, many organizational planners look at sociotechnical systems design (STS) as the alternative to scientific management. The organizational structure and work environment can be adjusted to enhance the quality of working life (QWL). These adjustments can be designed so that:

- workers perform whole tasks and see their end product instead of only fragments;
- workers are trained to perform many tasks and can fill in where needed instead of always performing a single task;
- workers are formed into self-managing teams (natural work groups) that are responsible for a complete product instead of each worker being responsible for a part of the product;
- workers are empowered to work with customers to identify their needs and change the work process where necessary to better meet those needs.

Sociotechnical systems design has become a powerful tool for organizing the workplace. It gives workers a strong voice in how they perform their jobs. It transfers accountability for good work from management and planners to the employees. More importantly, it brings back a "craftsman" mentality to the workplace. Employees want to do their jobs well, they want to be recognized for quality work, and organizing along STS principles makes that possible.

Impact on the Federal Workplace

The movements toward organizing to produce quality goods and services and enhancing the quality of work life are having a profound impact on the modern workplace. Workers are becoming partners with management in designing quality into production processes and they are sharing in the consequent benefits. The challenge to the Federal government will be to find innovative ways to recruit and retain

workers given the realities of limited resources and often inflexible centralized personnel management procedures. Some ideas for accomplishing this include:

- allowing workers to be more involved in designing work processes and the products and services they produce;
- giving workers more flexibility in determining when and where they work -- flexitime and flexiplace (telecommuting);
- making work more interesting by giving workers whole tasks to perform and organizing them into work teams;
- providing training to broaden worker skills, and finding innovative ways to identify, educate, and train individuals before they enter the labor pool;
- encouraging workers to build relationships with their customers so they can determine their needs and feel a sense of satisfaction in knowing they are meeting those needs;
- making employees accountable for providing quality products and services to individual customers instead of nameless or faceless ones;
- increasing the quality of work life by providing employees with flexible benefits, including day care in the workplace and "cafeteria-style" benefit packages;
- giving local offices the flexibility to shape pay, benefits, and working arrangements to local employment conditions.

Conclusion

The quality revolution and the organizational changes that are taking place in the workplace should accelerate over the next decade because of the dynamics of the workforce trends identified here. In the future, companies will have to be more accommodating to employees in order to compete for the most qualified. Employers will have to (1) find innovative ways to identify workers with the potential to perform, and (2) educate and train those workers for the more demanding, higher skilled jobs.

U.S. workers will continue to demand changes in the way they are organized to do work and in the environment in which they work. Their demands will be met because employees will have more clout and the demands are consistent with and supportive of the quality revolution. The use of processes like Quality Function Deployment and Sociotechnical Systems Design should become more widespread as they continue to be recognized as effective strategies for advancing quality of products and services and quality of work life in the future.

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Summary of Public Attitude Survey Findings

by
Karl A. Broehm and Kevin Sharp
Research Division
Office of the Assistant Commissioner
(Planning, Finance, and Research)

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This article provides a summary of recent trends in public attitudes toward a variety of tax administration issues. These trends are important to the Service because of the implications they have for future tax administration policy. Most of the studies examined in this article were contracted by the IRS; however, results from surveys performed by independent organizations are also discussed. The most prominent survey since 1985 is the 1987 Taxpayer Opinion Survey, conducted by the Louis Harris organization in conjuction with the IRS. This survey measures a wide variety of issues of concern to the Service, including taxpayers' impressions of the 1986 tax law changes. Another survey of note is the 1986 Survey of Tax Practitioners, which explores tax practitioners' attitudes towards the IRS and its services. Also presented are excerpts from the Harris survey focus group interviews. Finally, the IRS continues to monitor public attitudes towards tax issues with such projects as the 1989 Taxpayer Opinion Survey and the 1989 Customer Needs Survey.

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Introduction

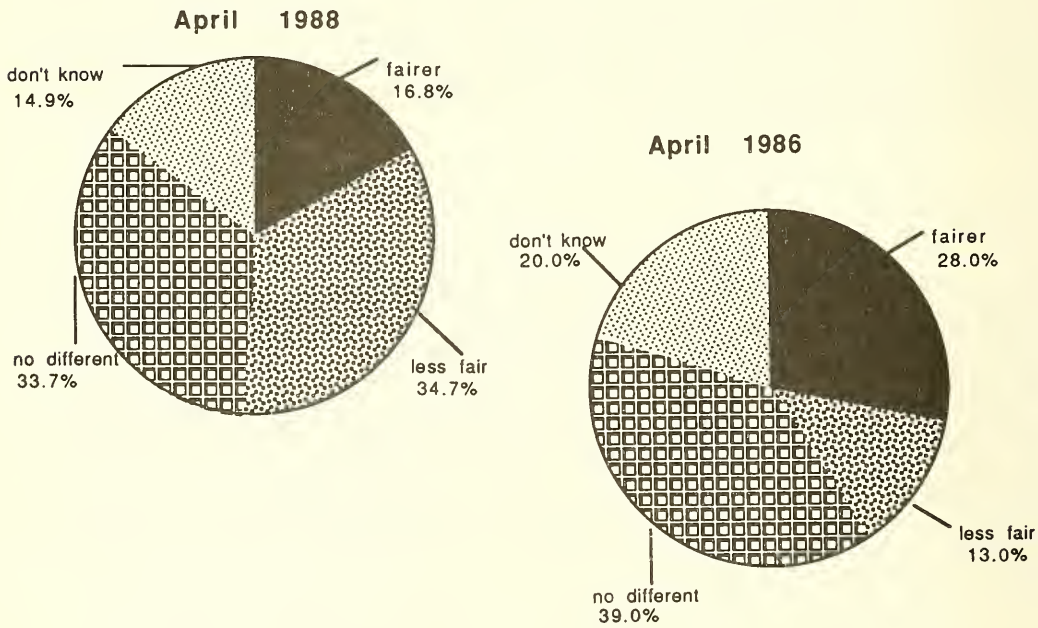
More surveys have been conducted by the Service between 1985 and 1988 than during any other time in its history. This was due in large part to the Tax Reform Act of 1986 (TRA 86), and to an increasing awareness by the Service of the importance of keeping abreast of taxpayer concerns. By closely monitoring the public's reactions and attitudes towards changes in the tax laws, the Service can be more responsive to taxpayer needs. The opinion surveys capture broad-based public attitudes by using statistical sampling techniques which ensure that the results are representative of the population. Focus groups, on the other hand, rely on small group interviews and discussions to capture qualitative information. Such information may not always be applicable to the entire population. Often the selection techniques and/or focus group sizes are inadequate for accurate representation of the entire population.[1]

This article is divided into five broad sections: (1) the public's response to the Tax Reform Act of 1986; (2) a review of important findings from the 1986 Survey of Tax Practioners; (3) alternatives that taxpayers would like (or not like) to see the IRS implement; (4) the public's views on the Federal government in general and on the IRS in particular; and (5) the public's perceptions regarding income tax compliance. In addition to the survey results, many of the following sections also include highlighted boxes containing excerpts of related focus group findings.

Attitudes Toward the Tax Reform Act of 1986

The best word to describe the public's feelings about the changes instituted by the Tax Reform Act of 1986 seems to be "uncertainty." For many taxpayers, the jury is still out on tax reform, even after having completed a full filing season under the new tax law. If one were to gauge public perceptions as positive or negative, it would appear that there is a growing negative response to the Tax Reform Act (see Figure 1). In 1986 (after the passage of TRA 86 but before taxpayers had filed under the new law), 28 percent of the taxpayers felt that TRA 86 would make the tax system more fair. The largest percentage, 39 percent, felt it would make no difference. However, by 1988 only 17 percent felt that TRA 86 made the system more fair, while those feeling the system had become less fair comprised the largest category at 35 percent.[2, 17]

Figure 1. The Tax Reform Act of 1986



Paradoxically, the public's perceptions of the fairness of the tax system have been improving over time. In 1978, 67 percent believed the system to be unfair. By 1986 this number declined to 61 percent, and in 1988 only 53 percent felt the tax system was unfair. However, 7 percent of those surveyed in 1988 did not know, reflecting the general uncertainty of the impact of the tax law changes.[2, 17] Future surveys are needed to determine the long term impact of TRA 86 on the public's perceptions of the overall tax system.

The public's initial impression in 1986 was that business and high income groups would pay more as a result of TRA 86. But by 1988, taxpayers believed that the middle class and two-income married couples were the most adversely affected groups. Moreover, when asked in 1986, almost half (48 percent) felt low income people would benefit the most; by 1988, a plurality of 45 percent felt high income people would benefit the most. Low income groups thought that TRA 86 would benefit primarily individual taxpayers (30 percent) and businesses (29 percent).[2, 19]

Focus Group Findings

Focus group findings were in agreement with survey results regarding uncertainty. An overwhelming reaction of groups to the implications of TRA 86 was:

"I don't know, nobody knows, not even the experts." [3, 29]

Many people were unsure how TRA 86 changed the tax laws. When asked about particular issues, in most cases a majority were uncertain as to whether or not that issue was affected by TRA 86.

- The two changes which a majority of taxpayers were certain of, and a minority were uncertain of, were: (1) the dollar amount of exemptions for the taxpayer, spouse, or dependents (only 39 percent were unsure); and (2) IRA deductions (slightly less than 50 percent were unsure).[4, 22-23]

- Among the issues the public was very unsure of were the Deduction For Married Couples When Both Work (60 percent), the Credit For Child Care Expenses (68 percent), and the Standard Deduction on a Child's Return (75 percent).[4, 22-23]

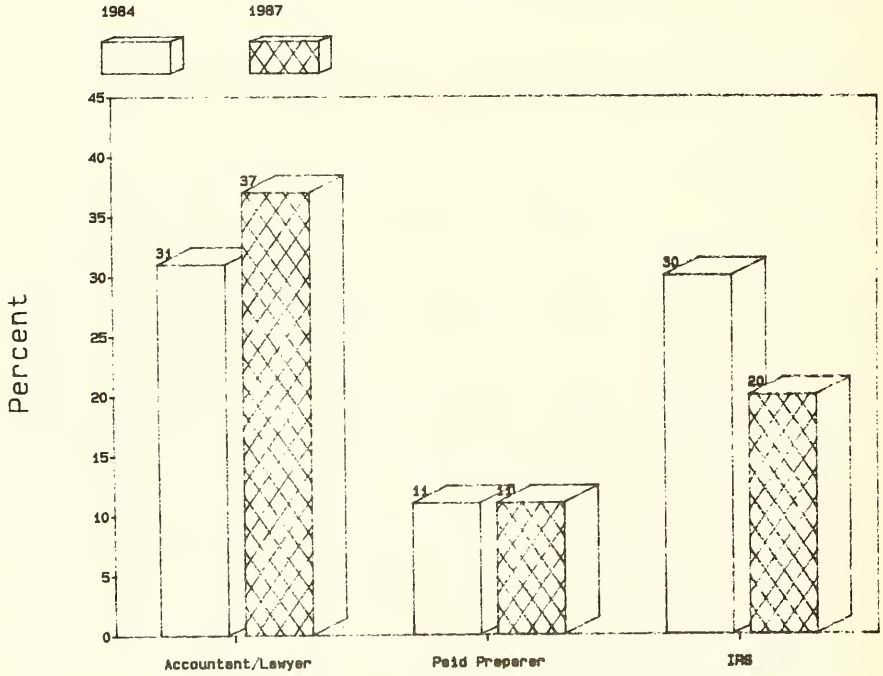
The uncertainty caused by TRA 86 tax law changes has led a large number of people to use professional tax preparers. In 1987, 46 percent of those asked said they did not prepare their own returns. By 1988, 50 percent were using professional tax preparers to complete their returns.[2, 21] The reasons why taxpayers seek outside help vary. Those with higher income and education usually consult accountants to improve their financial benefits. Those from lower income and education groups usually consult commercial tax firms, primarily because of the complexity of the forms.[4, 29]

Tax consultants, accountants, and lawyers are still the most popular sources for obtaining additional forms. The percentage of taxpayers obtaining forms from these sources did not change between 1984 and 1987, remaining at 40 percent.[5, 4] Concurrently, there has been a decrease in the use of IRS services to obtain additional forms.

Furthermore, when taxpayers need additional information for filling out their tax forms, an increasing number are opting for non-IRS experts (see Figure 2).

- In 1987, when asked "how did you get the extra information you needed" 37 percent admitted contacting an accountant or lawyer. This compares with 31 percent in 1984. In contrast, 30 percent consulted the IRS in 1984, but only 20 percent did so in 1987. Those contacting a paid tax preparer remained at 11 percent. [5, 6]

Figure 2. Taxpayers' Sources of Additional Information



Focus Group Findings

Focus group findings show that tax law complexities are motivating people to use tax preparers, either because they feel the tax preparer will save them money, or they do not understand the tax laws:

> "I could do it before, but it's too much of a big change; I got scared and I'll get someone else this year."
> "It's their job, they know the deductions better than I do. They can save me money."[3, 53]

Attitudes of Tax Preparers

Professional tax preparers give the IRS high ratings in some areas, but desire improvements in others. In 1986, paid preparers were asked two questions about their attitudes towards the IRS: "How favorable or unfavorable is your attitude towards the IRS?" and "How favorable or unfavorable was it say 5 years ago?" Forty percent answered "highly favorable" to the first question, while 45 percent gave this response to the second question.[6, 65] However, when the "somewhat favorable" response is included, these percentages increase to 74 and 76 percent respectively.[6, 67]

The majority of paid preparers rate IRS personnel as "good" or "excellent" in the execution of their jobs. However, their assessment of particular IRS programs and services is mixed:

- Sixty-seven percent of paid preparers viewed the IRS' Problem Resolution Office as "excellent" overall in helping resolve problems.[6, 16] Fifty percent of paid preparers rated the IRS as "excellent" in accuracy of data taken from a return, but 47 percent viewed them as "poor" in responding to previous communications.[6, 178-79]

- Fifty percent of paid preparers viewed the administration of preparer penalties as fair. However, only 42 percent felt such penalties were administered uniformly.[6, 77-78]

- Thirty percent of paid preparers gave the IRS telephone system a bad rating. However, this service received high marks on courtesy and cooperation. The system was rated as "poor" in terms of its "ease of getting through" and "finding the right person to talk to."[6, 104-05]

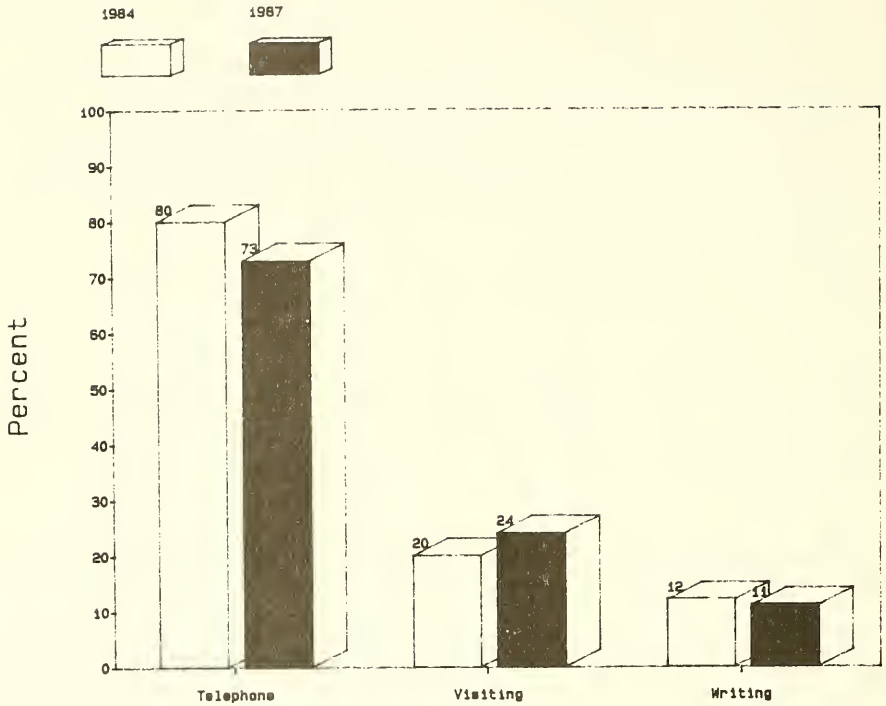
A large number of tax preparers, 41 percent, do not belong to any professional organization.[6, 28] As such, the IRS cannot communicate with these preparers through professional organizations. This emphasizes the importance of undertaking efforts to expand district practitioner mailing lists to include these unaffiliated preparers.

Taxpayer Attitudes Toward IRS Services

Taxpayers can either call toll free, write to, or visit IRS offices to obtain tax information and services. Most people still contact the IRS by phone (73 percent in 1987 compared to 80 percent in 1984), but an increasing proportion are opting to visit IRS offices in person (24 percent in 1987 versus 20 percent in 1984).[5, 9] Figure 3 depicts the changes in type of taxpayer contact with the IRS.

Taxpayers are supportive of minor changes in taxpayer services but they remain opposed to any drastic changes in when or how they file. A strong minority of taxpayers are in favor of extending Taxpayer Service hours of operation to include nonbusiness hours. Thirty-seven percent favor extending telephone service on weekday evenings, while 28 percent would likely use an extended walk-in service during these times. Thirty-three percent favor extending telephone service to include Saturdays, and 27 percent favor extended walk-in service on Saturday.[7]

Figure 3. Taxpayer Contact With IRS



Proposals to radically change the filing system continue to be strongly opposed by taxpayers. One such proposal is staggered filing, where taxpayers would be required to file their returns at different times of the year. Staggered filing proposals based on systematic procedures such as filing by month of birth or by the last digit of one's social security number have not fared well.[8, 1-3] Forty-two percent of taxpayers opposed staggered filing by birth month, 26 percent favored this idea, and 28 percent were neutral.[8, 9] Forty-six percent opposed staggered filing according to the last digit of one's social security number, while 21 percent favored this, and 29 percent were neutral.[8, 11] The majority of respondents also continue to reject the idea of extending the filing deadline to June 30 or September 30.[8, 14]

The public's negative response to filing alternatives reflects prior research findings. In 1984, focus group respondents also rejected such methods as computer, telephone, kiosk, and employer filing.[9, 34-35] In addition, the public is overwhelmingly opposed (83 percent) to paying their taxes by credit card.[4]

Attitudes of the Public Toward the IRS

The public has a negative opinion of the IRS when compared with other Federal agencies. The IRS ranks least favorably among a list of 15 Federal agencies. In 1987, only 49 percent of those

surveyed had an overall favorable opinion of the Service. This has remained the same since 1983.[10, 25] At the 1985 Conference of Tax Administration Research, an outside expert of opinion surveys observed that the IRS will inevitably compare unfavorably with other Federal agencies because of the particular function it serves. The Service is "the organization that takes people's money away from them" and, as such, creates a negative public image.[11, 137]

Focus Group Findings

Focus groups reflected the public's negative opinions of the IRS:

> "All they need to know is where you live and how much money you earn, the rest is none of their business." [5, 26]

However, some recognize that negative opinions of the IRS are based on media stereotypes:

> "Fear [of the IRS] is based on media hearsay; they only report the mistakes, they never report when the IRS pays someone back."[5, 26]

Forty-eight percent of those surveyed view the IRS solely as an enforcement agency, while only 11 percent consider it "only a service agency." About a third (34 percent) view the IRS as both a service and an enforcement agency.[4]

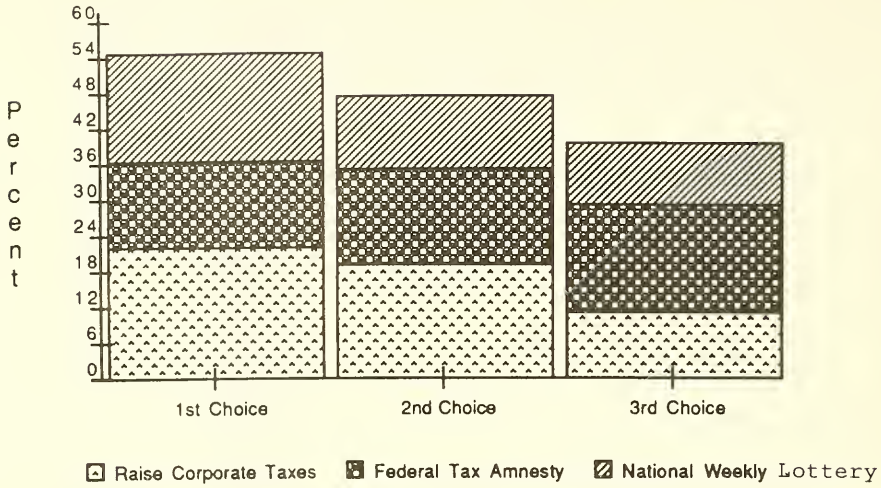
Taxpayers are mildly supportive of extending the role of the IRS to include collecting certain Federal debts. At the same time, the public is not in favor of government agencies sharing information with each other.

- In 1986, 73 percent felt it was acceptable for the IRS to withhold refunds in order to collect delinquent student loans.[12, 136]

- In 1987, 61 percent of the taxpayers favored the IRS sharing of information with the Census Bureau, and 65 percent favored such sharing with the Department of Justice.[4] However, only 38 percent favor Federal agencies sharing information about taxpayers among themselves.[4]

A survey conducted for H&R Block in 1986 showed that the public considers raising corporate taxes as the best way to combat the Federal deficit. However, two new ideas showed substantial public support. A significant number of taxpayers felt that implementing a Federal tax amnesty program or creating a national weekly lottery would be positive steps toward reducing the Federal deficit.[13, 49] Figure 4 below illustrates this.

Figure 4. Best Ways to Combat the Federal Deficit



In contrast, a survey conducted by the Roper Organization in 1988 shows that taxpayers supported a one-time tax amnesty over an increase in corporate income taxes. Raising taxes on liquor and cigarettes (an option not covered by the H&R Block Survey) was the second most popular option. While the relative rankings of the various tax options have not change since a similar Roper survey in 1985, the following table shows that absolute levels of support have decreased for all but one of the options. This seems to indicate that the public is becoming less willing to use any kind of tax to lower the Federal deficit.[14, 15]

Table 1. Levels of Support for Various Tax Options to Reduce the Federal Deficit

Option To Consider:	1985	1988
A one-time Federal tax amnesty program to collect unpaid taxes with no interest and no penalties	NA	71%
Raising taxes on liquor and cigarettes	74%	69
An increase in corporate income taxes	73	61

Table 1. Levels of Support for Various Tax Options to Reduce the Federal Deficit (Cont'd)

Option To Consider:	1985	1988
A national, weekly ten million dollar lottery, with profits going to the government	62%	60%
Raising user taxes--gasoline taxes for drivers, airport taxes for passengers, etc.	36	32
A value-added or national sales tax on all products and services	32	27
An increase in personal income taxes	23	19
Taxing as personal income the value of benefits employed people get from their employers	18	18

The Public's Views on Tax Compliance

For the most part, the public disapproves of cheating on one's income tax, especially when underreporting income or overstating deductions/expenses is involved. A large majority still consider it acceptable not to declare barter income. However, this majority has decreased: in 1984, 75 percent of those surveyed felt it was acceptable not to report barter income; in 1987, 67 percent felt this way.[4, 75]

Both local and national surveys have been used to determine the extent of taxpayer noncompliance. Since 1980, 12 to 26 percent of those surveyed have admitted underreporting income, and 6 to 25 percent have admitted overstating deductions. At the national level, the percentage of taxpayers saying that they have overstated deductions increased between 1979 and 1987 (see Table 2). This change may not necessarily reflect an increase in noncompliance, but rather an increase in the willingness of people to admit their noncompliance.[15]

Table 2. Taxpayer Admittance of Noncompliance

Type of Noncompliance:	1979*	1984	1987
Overstating Deductions	4.4%	7%	11%
Underreporting Income	12.5	16	16

*Results obtained via Locked Box technique [16, 76-78]

The majority of taxpayers are distrustful of their fellow taxpayers. A pattern of cynicism among taxpayers has emerged:

- The percentage of respondents who believe "everyone would cheat on their taxes if they felt they could get away with it" dropped from 64 percent in 1984 to 54 percent in 1987.[4, 97]

- In 1987, younger taxpayers indicated more cynicism towards fellow taxpayers than did the older respondents. The 1984 study found this to be true as well, suggesting that the cynicism of younger taxpayers moderates as they grow older.[4, 92]

Figures 5A and 5B show the percentage of taxpayers who believe that other people will get caught if they cheat by large or small amounts respectively. In both cases, the number who believe it is likely that cheaters will be caught has increased since 1984, although the 1987 percentages are still slightly less than the 1966 levels. At the same time, there seems to be an increase in the percentage of taxpayers who are unsure about their own chances of being audited. [4, 101-04] This percentage almost doubled between 1984 and 1987 (from 7 percent to 13 percent), as is illustrated in Figure 5C.

Figure 5A. "When people try to cheat by large amounts, what do you think are their chances of being caught?"

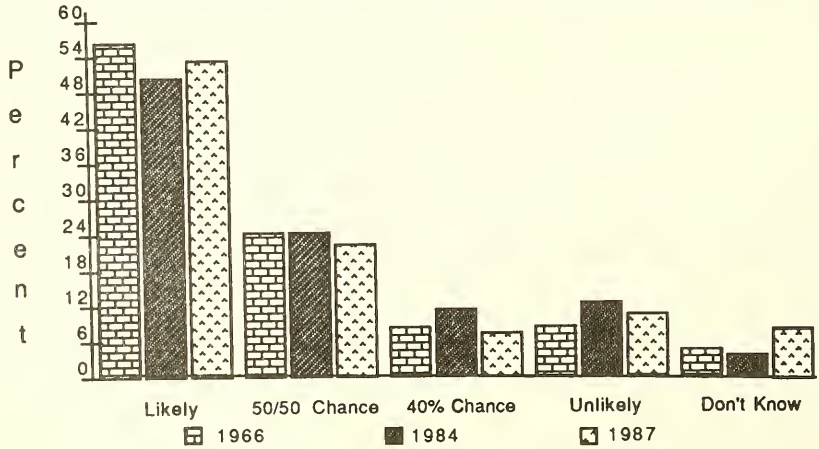


Figure 5B. "When people try to cheat by small amounts, what do you think are their chances of being caught?"

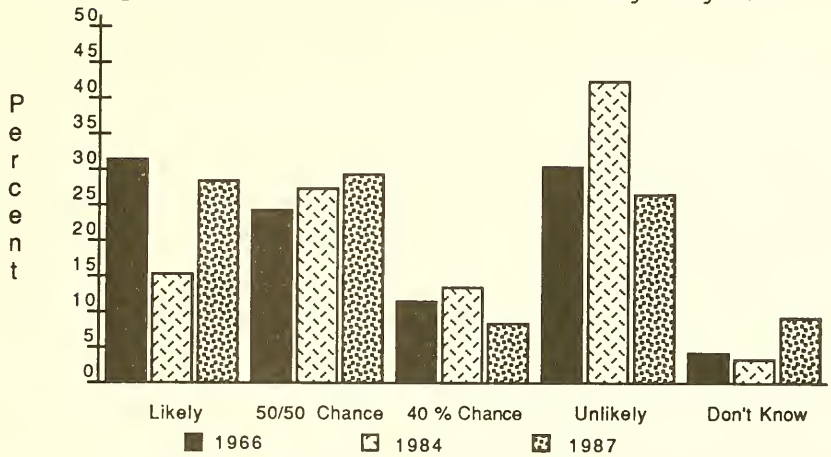
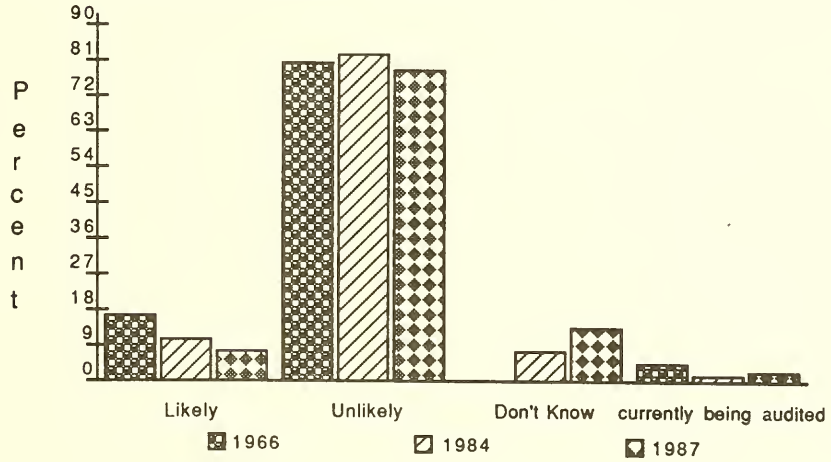


Figure 5C. Taxpayers' Perceived Chances that Their Last Return Will Be Audited



An independent survey conducted among Oklahoma City residents in 1985 asked respondents if they intended to cheat on future income tax returns. Almost 17 percent responded that they would.[17, 1] This survey also revealed that the public's attitude towards paying taxes might be improved if they were more aware of why the government needs the tax revenues. When asked to consider how much money they have left after paying taxes, the majority of taxpayers (69.8 percent) felt they paid too much in Federal income tax. But, when asked to judge the amount they pay in taxes in view of what the Federal government is expected to do with the tax revenues, only 60.1 percent of those surveyed felt they paid too much income tax.[17, 4]

The 1987 Harris survey concluded that the best means for collecting taxes are: (1) simplify the tax code, (2) help people fill out their tax returns, (3) emphasize penalties (as well as increase them), and (4) increase the likelihood of being apprehended for tax evasion. Finally, the "single most effective thing" the IRS can do to get people to pay their taxes is to "collect a fair share from the rich and to eliminate loopholes in the system." [4, 3]

The use of general market research techniques has expanded throughout the Service. The IRS continues to monitor taxpayers' attitudes and opinions as part of its efforts to be more responsive to the needs of its customers. Surveys and focus groups have become an integral part of the process for monitoring IRS customer needs. The 1989 Taxpayer Opinion Survey and the 1989 Customer Needs Survey are two examples of the Service's present monitoring efforts.

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Taxpayer Perceptions About the Quality of Taxpayer Service

by
Shien Perng
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)
and
Mike Chovonec
Taxpayer Service Division
Office of the Assistant Commissioner (Taxpayer Services)

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An opinion survey of taxpayers contacting Taxpayer Service showed that, in general, taxpayers were satisfied with the service they received. Those taxpayers receiving telephone or walk-in assistance rated the assistors highly in all aspects of the service. Results of the survey indicated that taxpayer assistance had a major impact on voluntary compliance.

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Introduction

The Taxpayer Service Division of the Internal Revenue Service (IRS) answers questions and resolves problems regarding tax laws, tax forms, and tax account information. This Division also assists taxpayers in tax return preparation and filing. Taxpayers can obtain assistance by: calling a toll free number, visiting a district office or post of duty, or writing to a district office. The majority of the requests, 86.3 percent, are by telephone. Walk-in assistance comprises 16.1 percent, while written correspondence is only 0.3 percent of the work. In addition to these three types of assistance, Taxpayer Service also sponsors many voluntary assistance programs at community locations. These programs are geared toward specific taxpayers, such as the elderly or those with low incomes.

The IRS is concerned with how taxpayers perceive taxpayer assistance. Furthermore, the IRS is interested in whether taxpayer assistance improves taxpayers' abilities to voluntarily comply with tax laws, and how the Tax Reform Act of 1986 has affected the taxpayers. To address these issues, the IRS conducted an Opinion Survey of Taxpayers Contacting Taxpayer Service in February to June 1988. This article reports some highlights of the findings from this opinion survey.

Survey Methodology

Price Waterhouse, a consulting company, was contracted to conduct the survey. They, in turn, subcontracted the field interviews to the Gallup Organization. The survey population consisted of all taxpayers receiving taxpayer assistance by telephone, walk-in, or correspondence.

A total of 2,703 taxpayers receiving telephone assistance were randomly selected. Telephone interviews of these taxpayers were conducted by Gallup Organization after the taxpayers were done talking with the assistor. Out of 2,703 attempts, 2,438 interviews were completed for a completion rate of 90.2 percent.

A random sample of 3,492 taxpayers using walk-in assistance were selected for interviews by Gallup after the taxpayers received assistance. Out of 3,492 attempts, 2,350 personal interviews were conducted. In addition, 110 completed questionnaires were mailed by taxpayers failing to complete the interviews in-person. Therefore, a total of 2,460 questionnaires were completed, with a completion rate of 70.4 percent.

Price Waterhouse conducted a mail-out questionnaire survey of 2,985 randomly selected taxpayers receiving correspondence assistance. They obtained 1,452 completed questionnaires after an extensive follow-up effort. The completion rate was 48.6 percent.

Questions asked in the survey were about the tax issues inquired by the taxpayer, the quality of service, the impact of the service received, the impact of the 1986 Tax Reform Act, the suggestions for service improvement, the characteristics of returns the taxpayers filed, and the demographic data of the taxpayers. Results are highlighted in the following sections.

Reasons for Contact

Table 1 summarizes the reasons taxpayers contacted Taxpayer Service. About 50 percent of the taxpayers that visited IRS and about 42 percent of taxpayers that called asked about tax issues. Taxpayers were less likely to visit the IRS when inquiring about their refund status; they would call or write. They tended to visit or write to an IRS office when they needed tax forms or publications. (The last column, "Overall," represents a weighted average of three modes of assistance.)

Table 1. Reasons for Contacting IRS by Mode of Assistance

	Mode of Assistance			
Reasons	Telephone	Walk-in	Correspondence	Overall
Get Tax Forms	11.0%	28.3%	20.8%	13.8%
Get Tax Publications	3.0	9.8	9.9	4.1
Notices/Letters/Bills	21.7	17.8	16.6	21.0
Refund Status	18.9	7.8	17.1	17.1
Tax Issues	41.6	50.0	38.4	42.9
Other	15.5	13.7	25.2	15.2

Note: Multiple Responses Allowed.

Table 2 summarizes the type of advice taxpayers asked for when contacting the IRS about tax issues. Overall, about 23 percent of taxpayers asked about what counts as income. Almost 19 percent of taxpayers needed help in figuring out taxes. Deductions and tax payments/W-4s were the next most frequently asked issues.

Table 2. Type of Issue Asked by Mode of Assistance

Type of Issue	Mode of Assistance Telephone	Walk-in	Correspondence	Overall
Claiming Dependents	11.6%	9.8%	11.0%	11.3%
What Counts as Income	23.3	19.7	23.0	22.7
Deductions	13.9	11.1	13.5	13.5
Adjustments to Income	8.6	8.3	23.2	8.6
Tax Credits	4.1	5.3	24.0	4.4
Tax Payments/W-4s	13.9	12.6	31.2	13.8
To Figure Taxes	14.4	39.9	16.3	18.5
Treat Residence Sale	3.3	2.9	7.5	3.2
Other	23.6	17.2	2.0	22.4

Note: Multiple Responses Allowed.

Overall Satisfaction with Taxpayer Service

In general, taxpayers were satisfied with the service provided by IRS. Table 3 summarizes the overall satisfaction level. Nearly 90 percent of taxpayers who visited or called IRS said that they were either very pleased or somewhat pleased with the service. Taxpayers who wrote for assistance were less satisfied; about 58 percent of them were very or somewhat pleased. This result is logical since with correspondence assistance, there is no direct interaction with the taxpayers. The lack of opportunity to pinpoint the taxpayers' specific question or to secure additional information made it difficult for the assistors to assist taxpayers effectively.

Table 3. Overall Satisfaction Level by Mode of Assistance

Responses	Mode of Assistance Telephone	Walk-in	Correspondence	Overall
Very Pleased	64.9%	67.6%	32.3%	65.3%
Somewhat Pleased	21.9	21.3	26.0	21.8
Somewhat Displeased	6.3	5.6	19.8	6.2
Very Displeased	4.4	4.0	18.7	4.4
Do Not Know/No Reply	2.5	1.5	3.2	2.3

Rating of Assistors

In addition to overall satisfaction, we asked taxpayers to rate the assistor who served them. The assistor was rated using criteria such as knowledge in their specific tax issues, ability to give a useful answer, ability to understand the taxpayers' questions, ability to communicate clearly and concisely, eagerness to help, and politeness. Each criterion was rated from 1 to 6, with 1 being poor and 6 being excellent. Table 4 summarizes the average rating scores. (If the rating score was assigned purely by chance, the average would have been 3.5, or the midpoint of the scores.)

Table 4. Average Rating Score by Mode of Assistance

	Mode of Assistance			
Rating Criteria	Telephone	Walk-in	Correspondence	Overall
Knowledge	5.0	5.1	3.5	5.0
Give a Useful Answer	5.1	5.2	3.6	5.1
Understand Questions	5.2	5.2	3.8	5.2
Communicate Concisely	5.3	5.3	3.9	5.3
Communicate Clearly	5.4	5.4	3.8	5.4
Eagerness to Help	5.5	5.5	-	5.5
Politeness	5.7	5.6	-	5.7

The average scores were all greater than 5 for telephone and walk-in assistance. Criteria relating to the assistors' familiarity with tax matters, such as knowledge, ability to give a useful answer, and ability to understand the taxpayers' questions were rated slightly over 5. Those criteria relating to the assistors' language ability, such as ability to communicate concisely and clearly, were rated higher, ranging from 5.3 to 5.4. Those criteria relating to the assistors' personality, such as eagerness to help and politeness, were rated the highest, ranging from 5.5 to 5.7.

The rating scores for correspondence assistance were much lower. The average score ranges from 3.5 to 3.9, with assistors' knowledge rated lowest at 3.5. This rating score is about the midpoint between poor and excellent. Correspondence assistors were not rated in terms of eagerness to help and politeness.

Tables 5 through 11 show the detailed distribution of the rating score for each criterion used. For telephone and walk-in assistance, the assistors were rated highly based on every criterion.

Table 5. Rating of Assistors' Knowledge on Tax Matters

Response/Score		Mode of Assistance: Telephone	Walk-in	Correspondence	Overall
Poor	1	4.2%	3.4%	22.8%	4.2%
	2	2.5	2.5	11.6	2.5
	3	4.9	3.8	14.8	4.7
	4	8.5	7.9	12.5	8.4
	5	21.3	18.2	16.0	20.8
Excellent	6	55.7	61.8	22.4	56.6
Do not Know		2.9	2.7	-	2.9
Average Score		5.0	5.1	3.5	5.0

Table 6. Rating of Assistors' Ability to Give a Useful Answer

Response/Score		Mode of Assistance: Telephone	Walk-in	Correspondence	Overall
Poor	1	4.4%	4.1%	24.8%	4.4%
	2	2.7	1.7	11.1	2.5
	3	4.1	3.2	12.7	4.0
	4	6.1	6.2	11.1	6.1
	5	16.7	16.0	16.6	16.5
Excellent	6	63.2	66.4	23.8	63.6
Do not Know		2.9	2.4	-	2.8
Average Score		5.1	5.2	3.6	5.1

Table 7. Rating of Assistors' Ability to Understand

Response/Score		Mode of Assistance Telephone	Walk-in	Correspondence	Overall
Poor	1	1.6%	1.8%	15.9%	1.6%
	2	1.4	1.5	9.1	1.4
	3	3.4	3.5	14.2	3.5
	4	8.2	6.6	13.8	7.9
	5	22.2	20.1	18.7	21.8
Excellent	6	61.6	64.5	28.2	62.0
Do not Know		1.6	2.0	-	1.7
Average Score		5.2	5.2	3.8	5.2

Table 8. Rating of Assistors' Ability to Communicate Concisely

Response/Score		Mode of Assistance Telephone	Walk-in	Correspondence	Overall
Poor	1	1.1%	1.6%	15.5%	1.3%
	2	1.2	1.1	10.5	1.2
	3	3.5	3.1	15.0	3.5
	4	6.8	6.8	14.3	6.8
	5	20.2	19.3	19.9	20.1
Excellent	6	64.8	65.9	24.8	64.9
Do not Know		2.3	2.2	-	2.2
Average Score		5.3	5.3	3.9	5.3

Table 9. Rating of Assistors' Ability to Communicate Clearly

Response/Score		Mode of Assistance: Telephone	Walk-in	Correspondence	Overall
Poor	1	1.0%	1.5%	14.2%	1.1%
	2	1.3	1.1	10.2	1.3
	3	2.9	2.2	13.2	2.8
	4	5.7	5.6	14.4	5.7
	5	19.7	18.1	21.2	19.5
Excellent	6	67.8	69.9	26.8	68.0
Do not Know		1.7	1.6	-	1.7
Average Score		5.4	5.4	3.8	5.4

Table 10. Rating of Assistors' Eagerness to Help

Response/Score		Mode of Assistance: Telephone	Walk-in	Correspondence	Overall
Poor	1	0.8%	1.4%	-	0.9%
	2	1.1	0.9	-	1.1
	3	2.2	1.9	-	2.2
	4	3.4	3.7	-	3.5
	5	14.8	13.3	-	14.5
Excellent	6	75.9	77.0	-	76.0
Do not Know		1.8	1.8	-	1.8
Average Score		5.5	5.5	-	5.5

Table 11. Rating of Assistors' Politeness

Response/Score		Mode of Assistance Telephone	Walk-in	Correspondence	Overall
Poor	1	0.4%	1.0%	-	0.5%
	2	0.4	0.3	-	0.4
	3	1.1	1.1	-	1.1
	4	2.5	2.7	-	2.5
	5	12.0	11.7	-	11.9
Excellent	6	82.0	81.7	-	81.9
Do not Know		2.9	1.4	-	1.6
Average Score		5.7	5.6	-	5.7

Taxpayers who sought assistance on the same issue more than once were asked about the consistency of the answers they received. Table 12 summarizes the results. They are similar for all three modes of assistance. About 50 percent of taxpayers said that the answers were exactly or generally the same.

Table 12. Consistency of Advice Given by Assistors

Response	Mode of Assistance Telephone	Walk-in	Correspondence	Overall
Exactly Same	16.7%	23.0%	17.5%	17.9%
Generally Same	31.8	29.2	37.8	32.4
Different	45.4	39.6	44.7	44.3
Do not Know	6.0	8.1	-	6.4

Effect of Taxpayer Assistance

The survey intended to assess the effect of Taxpayer Service on compliance of voluntary income tax reporting and tax return preparation. To accomplish this, taxpayers were asked if the advice they received would help them properly complete the tax forms and send the correct payment in on time. Table 13 summarizes the results. About three-fourths of taxpayers receiving telephone or walk-in assistance felt that the advice would help them comply with the tax laws. However, only about a third of those taxpayers receiving correspondence assistance felt the same way.

Table 13. IRS Advice Will Help Taxpayer Compliance

Response	Mode of Assistance Telephone	Walk-in	Correspondence	Overall
Yes	74.8%	78.5%	34.6%	75.3%
No	7.3	8.0	15.1	7.4
Do Not Know	17.9	13.6	50.3	17.3

Taxpayers were asked to estimate whether the advice they received would increase or decrease their tax, and if so by how much. Table 14 shows the results of these questions. Overall, nearly 30 percent of taxpayers who responded said that the advice would change their tax; about 14 percent said that it would increase their tax and about 15 percent said that it would decrease their tax. Those taxpayers receiving telephone and walk-in assistance estimated a larger change than those receiving correspondence assistance. For those taxpayers who expected a tax increase, the estimated average increase was $302, while for those who expected a tax decrease, the average was $334.

Table 14. Effect of Advice on the Tax Amount

Responses	Mode of Assistance Telephone	Walk-in	Correspondence	Overall
Increase	13.8%	14.6%	10.7%	13.9%
$100 or less	28.3%	25.7%	21.9%	27.8%
$101 to $200	22.2	20.3	20.0	21.8
$201 to $500	16.1	14.4	25.2	15.8
More than $500	20.6	24.3	32.9	21.3
Do not know	12.8	15.3		13.2
Decrease	14.7%	14.0%	8.4%	14.5%
$100 or less	27.6%	29.2%	21.3%	27.9%
$101 to $200	15.1	22.2	15.6	16.3
$201 to $500	13.5	20.3	23.8	14.7
More than $500	26.0	23.1	39.3	25.6
Do not know	17.7	5.2		15.5
No Effect	43.0%	43.6%	27.8%	43.0%
Do not Know	28.5%	27.9%	53.1%	28.6%

Taxpayers were asked if they intended to follow the advice that they received. The overall results, as shown in Table 15, indicate that 86.2 percent of the taxpayers answered "yes" and only 3.4 percent answered "no." For taxpayers receiving telephone and walk-in assistance, the results are similar to the overall results. However, taxpayers receiving correspondence assistance had different results; only 42.8 percent answered "yes" and 44.7 percent answered "do not know."

Table 15. Taxpayers' Intention to Follow the Advice

Response	Mode of Assistance			
	Telephone	Walk-in	Correspondence	Overall
Yes	86.3%	87.0%	42.8%	86.2%
No	3.1	4.1	12.5	3.4
Do Not Know	10.6	8.9	44.7	10.5

Taxpayers were asked to predict how many people they would tell about the information they received from Taxpayer Service. The results are in Table 16. Nearly 70 percent of taxpayers would tell at least one person, and 18.7 percent would tell five or more persons.

Table 16. Spread of Advice by Word of Mouth

Number of Persons to Tell	Mode of Assistance			
	Telephone	Walk-in	Correspondence	Overall
None	21.4%	23.7%	41.3%	21.8%
1 or 2	35.2	27.6	23.8	33.9
3 or 4	15.8	17.1	13.7	16.0
5 to 10	9.3	11.5	8.7	9.7
More Than 10	8.5	11.8	12.5	9.0
Do Not Know	9.9	8.4	-	9.6

These observations suggest that taxpayer assistance has a major effect not only on those who contacted IRS for assistance, but also on other taxpayers who received information by word of mouth.

Effect of 1986 Tax Reform Act

The 1988 filing season was the first one to register the effect of the Tax Reform Act of 1986. Taxpayers were asked if they contacted the IRS because of the tax law changes brought on by the Tax Reform Act. Table 17 shows the results. Overall, about 27 percent answered "yes."

Table 17. Contact IRS Due to 1988 Tax Reform Act

Response	Mode of Assistance Telephone	Walk-in	Correspondence	Overall
Yes	25.0%	35.0%	20.7%	26.6%
No	71.5	63.6	79.3	70.2
Do Not Know	3.5	1.3	-	3.2

Taxpayers were asked if their 1987 tax return was easier to prepare than their 1986 return. As shown in Table 18, 10.1 percent answered "easier," 36.6 percent answered "harder," and 23.4 percent answered "same."

Table 18. Effect of 1986 Tax Reform Act on Preparing Tax Returns

Compared to the Year Before	Mode of Assistance Telephone	Walk-in	Correspondence	Overall
Easier	9.8%	11.8%	4.2%	10.1%
Same	23.4	23.2	26.9	23.4
Harder	35.8	40.6	33.4	36.6
Did not Prepare	22.7	15.7	32.1	21.6
Did Not File	1.1	2.8	3.3	1.4
Do Not Know	7.1	5.8	-	6.8

The results in Tables 17 and 18 showed that the tax law changes had a major impact on the return preparation of taxpayers and on the operation of Taxpayer Service.

Suggestions for Improvement

Taxpayers were asked for suggestions to improve Taxpayer Service. As shown in Table 19, overall, about 64 percent of taxpayers did not have any suggestions. The most common suggestion offered was to have more knowledgeable assistors. About 49 percent of taxpayers receiving correspondence assistance offered this suggestion. About 35 percent of these taxpayers also wanted fewer busy signals.

Table 19. Suggestions for Improvement by Mode of Assistance

Suggestions	Mode of Assistance Telephone	Walk-in	Correspondence	Overall
No Suggestions	65.4%	56.3%	20.7%	63.7%
Knowledgeable Assistor	15.4	14.4	49.3	15.4
Fewer Busy Signals	5.6	5.9	34.8	5.8
More Assistors	2.8	8.4	13.3	3.8
Publicizing Service	3.5	4.8	18.2	3.8
Publicizing Changes	3.0	6.1	23.1	3.6
Other	14.6	18.0	15.7	15.2

Note: Multiple Responses Allowed.

Conclusions

This survey, being the first of its kind, revealed many unexpected, but generally satisfying results. A high percent of taxpayers expressed satisfaction with the service they received. Overall, the assistors were rated highly based on all criteria surveyed, which included assistors' knowledge in tax matters, ability to give a useful answer, ability to understand taxpayers' questions, ability to communicate clearly and concisely, eagerness to help, and politeness.

This survey also suggested that Taxpayer Service has a major impact on voluntary compliance. More than three-quarters of the taxpayers said that the advice they received would help them comply with tax laws. Furthermore, many taxpayers also said they would tell others about the advice they received.

The results provided positive taxpayer feedback about the quality of service assistors provided. These results reflected the emphasis that the IRS, and Taxpayer Service in particular, placed on meeting customer needs.

Artificial Intelligence Applications in the IRS

by
Richard K. Schreiber
Artificial Intelligence Laboratory
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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The IRS is engaged in a major effort to examine several paradigms of Artificial Intelligence (AI) in order to find their applicability to the real-world problems of tax administration. This article will seek a basis for categorizing the projects under development in the IRS AI Lab, analyze the current environment in which tax returns are processed, examine how the efforts undertaken by the AI Lab relate to this environment, and discuss the ways in which Artificial Intelligence may impact on IRS.

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Search for a Framework

The IRS has initiated a major program to apply Artificial Intelligence techniques and equipment to the problems of tax administration. This effort is centered around the Artificial Intelligence Lab which was created in 1985 and now consists of twenty-seven specialists who have received from nine months to two years of formal training in Artificial Intelligence and expert systems.

Lab projects cover the spectrum of IRS functions. In all there are ten major IRS functions, including Examination, Taxpayer Service and Returns Processing, Collection, Computer Services, etc. This functional orientation is reflected in the AI Lab. Currently, there is at least one Lab member from each of the ten major functions, and there are systems under development for eight of the ten functions.

Following the categories of 1988 American Association of Artificial Intelligence conference proceedings, work being done in the Lab falls into the research categories of automated reasoning, learning and knowledge acquisition, natural language, and user interfaces.

A more descriptive way to classify application projects is to focus on generic problem solving. This emphasizes the development of complete systems that may combine interfaces, reasoning, and natural language, whereas research categories generally refer to piecemeal techniques and methods. The following generic categories describe the projects under development in the Lab:

- **Classification Projects** -- classifies input data
- **Assistant Systems** -- assists in classifying data
- **Intelligence Gathering** -- finds relationships among data

- **Planning** -- develops plans considering constraints
- **Text Generation** -- generates text output
- **Software Engineering** -- converts input to code
- **Learning** -- improves system performance over time

Applications in each of these categories will be examined in detail after a discussion of the constraints imposed by the processing environment.

Map of the Processing Environment

There are currently four major characteristics of IRS processing. First, tax account data are organized into a centralized master file system that is processed weekly. All transactions post to (update) this master file and all data bases are re-extracted with each weekly cycle.

Second, the volume of transactions posting to the master file is extraordinarily high: an average of five transactions posts annually to each account. Given close to 200 million accounts, the total volume of transactions is now approaching one billion items per year. This yields an average weekly volume of over 40 million transactions with processing peaks far in excess of this average.

Third, there is the continuing need for access to paper documents (returns, documents associated with returns, claims, etc.). Fourth, the processing of returns is horizontally integrated (i.e., each step in the processing of a return is performed by a separate function.) At each of the 10 IRS service centers, incoming returns in turn are batched by type of return, examined for completeness, data entered, and checked for discrepancies.

These four factors act as major constraints on the kinds of processing systems that can be implemented. After looking at the applications under development, we will discuss whether AI and expert systems can alter any of these constraints.

Applications

The AI Lab currently has sixteen applications either completed or under development. For the most part these applications have all followed a de facto development cycle. Once a project is identified there may be a design or information gathering stage, but usually the project proceeds quickly to a prototype which incorporates a representative sample of the features desired in the final system. A decision to continue development of the project is based on an assessment of the prototype.

A field test of the project frequently follows the prototype. The purpose of the field test is to provide feedback from potential users and to assess the project in a quasi-operational environment.

Previously unidentified problems could cause the potential value of a project to be re-assessed at this point. After field testing, the project goes into a pilot test. Upon completion of the pilot, the project is ready for full-scale implementation. A summary of applications and their current status is presented in the following table:

Current Status of IRS AI Laboratory Projects

Classification Projects	Organization	Status	
Tax Return Issue Identifier	Examination	Pilot Test	1990
Magnetic Media Waivers	Returns Processing	Operational	1988
Reasonable Cause Determination	Collection	Field Test	1988
Employment Tax Determiner	Collection	Prototype	1989
EP/EO Actuarial System	Employee Plans	Operational	1988
Assistant Systems			
Carryback Processing Assistant	Returns Processing	Pilot Test	1989
International Section 482	International	Field Test	1989
Taxpayer Service Assistant	Taxpayer Service	Field Test	1989
Estate Tax Return Classifier	Examination	Field Test	1989
Error Resolutions ES	Returns Processing	Design	
Intelligence Gathering			
Link Analysis	Criminal Investigation	Operational	1988
Planning			
Automated Workload Management	Computer Services	Prototype	1989
Manpower Planning	Examination	Design	
Text Generation			
Correspondex ES System	Returns Processing	Operational	1989
Software Engineering			
SAT Automated Data Preparation	Returns Processing	Operational	1988
Learning Systems			
Machine Learning Project	International	Design	

Classification Systems

Classification is one category that appears with some regularity in the expert system literature. Classification systems analyze data and reach determinations based on that analysis. This type of problem solving underlies most of the systems currently under development in the Lab. Characteristically, systems in this category serve as surrogates for experts and can be operated by paraprofessionals or non-expert personnel.

One of the most critical tasks in IRS is selecting returns for audit and identifying the issues to be examined. It is currently a two-step process. Returns are selected by a statistical method called the discriminant function and are shipped to a service center where examiners classify the returns, select those returns that in fact should be audited, and determine the issues to be investigated. The **Tax Return Issue Identification Expert System** [8] will automate the second step of this classification process. The actual time required to classify a case will not be much reduced, because the time saved in analysis will be offset by the additional time required to enter return information. Yet there is a projected $50 million annual benefit which will be achieved by freeing classifiers to examine additional cases. In its last performance test, the prototype was able to identify 90 percent of the issues currently detected by expert classifiers.

A smaller system that has already been placed into operation is the **Magnetic Media Waivers Expert System.** This system analyzes requests from taxpayers who wish to file information returns on paper instead of magnetic media. It was able to process the majority of the requests received for calendar year 1987 and is currently able to process over 99 percent of the incoming requests. The Magnetic Media Expert System is integrated with a data base package that enables retrieval of processed cases in response to telephone inquiries. In addition to introducing much greater consistency into the determination of waiver requests, this system has replaced the four technicians who previously made these determinations with a single clerk who enters data from the waiver request form.

The **Reasonable Cause Determination Expert System** analyzes requests to abate late filing and late payment penalties. A report by the General Accounting Office indicated there is an error rate of approximately 25 percent in making reasonable cause determinations that costs the government up to $30 million annually. A successful prototype of the system has been developed and field tested, but implementation will require integration into the existing data retrieval system.

An expert system can be used to reduce the cost of delivering expertise or to increase the general quality of expertise available. Two task-specific expert systems that bring expertise into areas where it has been previously lacking or inconsistently applied are the Determiner Expert System and the Exployee Plans/Exempt Organizations Actuarial Assistant. **The Determiner Expert System** enables an IRS tax collector to determine whether a worker should be considered an employee or an independent contractor for the purposes of determining employment tax. The Determiner System will enable IRS to bring a level of accuracy and consistency to employment tax determinations that could not be accomplished through routine training of the revenue officers who make these determinations.

The Employee Plans/Exempt Organizations Actuarial Expert System is used by Employee Plan (EP) examiners to analyze the actuarial basis for pension plan deductions on annual EP returns. EP examiners have

little or no actuarial knowledge. To use this system, the EP examiner follows guidelines for identifying returns that may be actuarially suspect. The actuarial assistant program then examines these selected returns by asking questions about the basic facts of the plan. The assistant combines specific plan data with embedded knowledge to produce a report on the plan's actuarial soundness.

Assistant Systems

Assistant systems analyze data in a manner similar to classification systems. The primary difference is that a classification system is designed to function independently, to replace an expert, while an assistant system is designed to work in tandem with an expert. Another characteristic is that an assistant system does not have access to all of the data possessed by the user since acquiring this data would be too expensive.

An interesting approach to obtaining data is taken by the **Carryback Processing System** [7]. Entity and Form 1040 data for the tax year involved are used to generate two or three screens of additional forms and computations. A technician works a case by comparing the taxpayer's "bottom line" total with the total generated by the system. If the total computed by the taxpayer and the total computed by the assistant system are in agreement, no additional input is required and the assistant can then generate the necessary transactions to adjust the taxpayer's tax. If the totals are not in agreement, the technician can either enter additional information or have the system enter a discrepancy resolution mode where it tries to determine if it has made erroneous assumptions or if the taxpayer has made an error.

In a field test of this system, the totals generated by the system agreed with the taxpayer's totals 50 percent of the time. When discrepancy resolution was requested, it was successful without the need for additional input data in half of the cases for which it was invoked.

A more traditional approach to obtaining data is taken by **The International Section 482 Expert System.** This system helps to identify issues by examining the returns of companies with overseas subsidiaries that are covered by section 482 of the Internal Revenue Code. The program has a forms interface and accepts some numeric return data. It also asks questions. These may be simple questions, for example, whether a certain supplemental form is present. Frequently, questions asked by the system require expert knowledge, such as whether the parent corporation's research and development investment is substantial. Asking for expert knowledge is a shortcut to requiring input of substantial data from the parent corporation's return.

Not surprisingly, there is a ubiquitous need within IRS for tax law information, revenue rulings, and procedural information. Text retrieval systems are one way to obtain this information, but there are glaring discrepancies between the concise answers that are desired and the reams of relevant, partially relevant, and irrelevant text that are too frequently delivered. **The Taxpayer Service Assistant** [2] follows a more structured expert system approach in delivering

information to the Taxpayer Service Representatives who answer tax questions phoned in by taxpayers. This feasibility prototype currently provides accurate, consistent, and complete advice for the dependency test, one of more than 150 tax topics that will ultimately be covered.

Assistant systems may be quite capable of reaching conclusions, but it is important that they know their limitations. The **Estate Tax Return Perfection and Classification Project** [4] provides assistance in classifying estate tax returns. This system will enable a para-professional to perform a task currently done by an estate tax attorney. In addition to identifying acceptable and unacceptable returns, this system also identifies returns it cannot classify. When it finds an unclassifiable return, the system identifies the questionable areas and the return is then passed to a human expert for resolution.

The Error Resolution Expert System will be used to assess the extent to which the current process of resolving discrepancies on tax returns can be automated. These discrepancies are identified after returns are entered and are currently resolved by expert examiners. The Error Resolution Expert System will work interactively with the examiner who will have access to an electronic image of the return.

Intelligence Gathering

In the course of their investigations, IRS Special Agents gather records containing thousands of information items that suggest potential criminal activity. Link analysis is a standard information analysis technique that finds relationships among entities and links them into a lattice. **The Link Analysis System** automates this process and provides a graphic interface that enables an agent to explore the constructed relationships. The system has been successfully tested using 25,000 currency transaction reports from one IRS district. Although the utility of this program will be limited to Criminal Investigation, it can be applied to several types of cases within that organization.

Planning Systems

When Lab members discussed potential applications with prospective users, we found that planning problems were one of the most frequently identified types of problems. In part this may be because planning problems are relatively unstructured and few of them have been automated using conventional technology. In part this may be because IRS had not previously identified any successful conceptual methodology for dealing with these types of problems. Planning problems range from well-defined workload scheduling projects to ill-defined resource projections. The Lab has selected projects that are relatively well-defined, but have a complexity that has not been addressed by previous systems.

The Automated Workload Management Expert System is being designed to provide on-line production control of the workload for all computer and print systems in the IRS service centers. None of the commercial scheduling packages or IRS-written packages used in the past have been successful in providing a useful dynamic schedule.

The Manpower Planning Model will calculate the manpower resources required to audit tax returns by type of return and work group. Unlike other Lab projects, this model will replace an existing program that produces schedules for work groups. An important motivation for developing a new system is the desire to provide an explanation facility.

Text Generation

Text generation can be viewed as a major industry within IRS. IRS tax examiners generate ten million items of correspondence to taxpayers -- not including the 300 different types of explanatory notices, balance due, and audit notices currently generated by the computer system. The production of correspondence in direct response to taxpayer inquiries or claims is supported by a Correspondex system which enables a technician to construct a letter from over 700 paragraphs by mixing selected paragraphs with narrative written by the technician.

The Correspondex system is antiquated. The large number of letter types and the proliferation of paragraphs requires real expertise on the part of a user to construct a correct letter. The fact that the composed letter cannot be seen or edited by the technician introduces significant errors into the process. **The Correspondex Expert System Interface**, in addition to providing some standard word processing editing and spell checking features, uses domain knowledge and a user profile (based on the assigned work and individual preferences of each tax examiner) to construct a letter. Most importantly, it does this within the context of the existing processing system. This technique of providing an additional interface between the user and the existing processing system is a model for introducing expertise into our current processing system with a minimum of disruption.

Software Engineering/Automatic Programming Systems

Systems acceptability testing is a large and expensive operation for IRS. Each year all programs are tested using artificially-constructed test data. **The SAT Automated Data Preparation Expert System** uses an expert knowledge base to generate Cobol code which in turn is used to produce the data for system testing. A knowledge acquisition module enables analysts who have little or no computer background to alter the existing knowledge base or update it for subsequent years by entering new rules.

Learning Systems

Learning is a method rather than a problem type. It is included as a separate category because the Lab is exploring machine learning paradigms. Several software tools, each representing a major machine

learning approach, will be evaluated against a set of selected problems. The approaches being investigated include decision trees, neural networks, Bayesian classification techniques, and a hybrid decision tree/neural net called a perceptron tree.

The most interesting problem being addressed is the use of a learning algorithm to determine the criteria for auditing international taxpayers. Data collected in taxpayer compliance studies will be used to train the learning program. If successful, this project could extend or dramatically alter the way in which the returns of U.S. citizens living abroad are selected for audit.

A second problem that will be studied by the learning project is how to identify criminal investigation cases that should be prosecuted. A learning algorithm will be used to analyze a data base of open and closed cases in order to develop a good case profile.

Something in Common

The applications discussed above have several characteristics in common. One of the most important is that all of the applications are delivered on distributed systems (i.e., systems in which computational power is distributed to the point of use rather that being centralized in a shared mainframe computer). This phenomenon is not simply a consequence of difficulty in connecting to the existing mainframes. The languages and software available on the mainframe systems currently are not adequate for the kinds of systems the AI Lab is developing. In addition, a time-shared computer is ill-suited computationally for delivering a graphic interface to a local terminal or for maintaining the symbol manipulation environments typically required by AI applications.

A second common thread is the applicability of the expert systems approach. Many of the problems to be solved in IRS can be categorized as classification problems; thus, many tasks within the existing processing system might be represented more effectively as expert system tasks. While the systems the Lab is developing may be independent of the existing processing system or extensions of it, it seems inevitable that, as the old systems are upgraded, they will be redesigned to incorporate expert systems technology, or that some system "extensions" will end up replacing conventional processes.

A third characteristic is the need for input data. Although the expert systems approach seems widely applicable to solving cognitive problems that were difficult to address using conventional technology, expert systems are dependent on input data in much the same way as conventional systems. They are not quite as dependent on input as a conventional system because they employ intelligent questioning strategies or use embedded knowledge to generate data. But the need for input data and the expense of acquiring it will continue to act as constraints on delivering expert systems.

Now For Some Projections

The efforts of the AI Lab are focused mainly on the medium term. That is, members of the Lab either are developing relatively large expert systems or are designing small prototypes to demonstrate the feasibility of large-scale projects. Typically, these projects require two to five years to deliver. While the Lab has demonstrated a preference for independent, stand-alone systems, several projects under development require connection to the existing processing system.

The heavy volume of transactions impose a real constraint on developing an expert system that could be incorporated into the weekly posting system. The systems under development extend rather than replace existing processing functions and are located at the periphery of the current processing system rather than being integrated into it.

The continuing need to refer to paper documents will act to limit the building of expert systems to those that can make do with relatively little input or have a particularly good pay-off. The need for data will also lead to assistant systems that work interactively with examiners.

The short-range picture is not really different from the medium-range one. Four projects have been completed which demonstrate the diversity of the programs under development. Two are stand-alone projects that run on a microcomputer, one is a graphics-oriented program that runs on a lisp machine, while the fourth will be integrated into the existing communications network.

In the long run, of course, everything may change. AI as applied to distributed processing may remove the bottleneck of weekly processing and make it practical to build intelligent processing into the posting cycle. More intelligent optical scanning and data retrieval may make it possible to electronically retrieve return data as it is needed. Once the Lab achieves technical maturity, we can expect a more detailed investigation of these areas.

Conclusion

The experience of the AI Lab to date shows the wide applicability of the expert systems approach. Several other AI techniques, such as software engineering and text generation, are proving to be powerful methods for extending the existing system. New systems may be delivered as independent, stand-alone systems or simple extensions to current applications. However, the new AI technology will be increasingly absorbed into the information processing system.

AI systems will exert a strong pressure for distributed processing. This will be true both for real-time and batch processing systems. Real-time systems need graphic interfaces in addition to inference mechanisms. Distributed systems will be needed for batch processing because the centralized, transaction-saturated systems cannot handle the additional overhead needed to bring additional expertise and intelligence to existing processing routines.

In the short run, the feasibility of using AI techniques has been confirmed. The several operational systems have enabled the delivery of expertise in a manner that was not previously thought possible. Most of the systems under development have been examined as prototypes; their value has been assessed and only systems that have passed this kind of test are undergoing development.

The systems being developed promise real impact in the medium-term. Their implementation will change the way IRS identifies audit issues, improve the quality of correspondence, upgrade the quality of expertise in a number of tasks, have an effect on the mix of work, and achieve some significant productivity gains.

An even greater impact will probably come later. The experience gained in building this current generation of systems will provide a model for the next generation of systems to be built. It seems likely that AI and expert system techniques will be used to replace as well as to extend current systems, and will become integral parts of the information processing system.

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The Taxpayer Service Assistant Expert System

by
Thomas J. Beckman
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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A number of projects are currently under development in the IRS Artificial Intelligence Laboratory. This article focuses on one of these projects, the Taxpayer Service Assistant expert system, that helps Taxpayer Service personnel provide advice to taxpayers on tax law questions. The purpose of the project is to enable these employees to provide better quality responses in terms of accuracy, completeness, consistency, and timeliness. The article begins by examining the nature of the assistor task. Next, text retrieval and expert systems are compared as alternative ways to support assistors and improve their quality of service. Then selected design issues involved in fielding the feasibility prototype are explored. Finally, issues that may affect the future course of project development are discussed.

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Background

The Nature of the Assistor Task

IRS assistors help taxpayers who call toll-free telephone assistance sites on a variety of matters. Front-line assistors categorize incoming calls, and refer calls that are not related to Taxpayer Service issues to the appropriate areas. The remaining calls fall into three categories: account, procedural, and technical questions. The Taxpayer Service Assistant (TSA) expert system addresses only the latter -- technical questions on tax law.

Front-line assistors are generalists who, on a daily basis, may encounter questions spanning the entire breadth of tax law. However, front-line assistors have limited experience and are trained to answer only frequently-asked questions on a variety of simpler tax topics. In fact, even after receiving six weeks of intensive training, front-line assistors are not expected to answer questions from memory; rather, they are expected to know where to find answers in IRS publications. Assistors consult IRS publications to locate text or confirm answers on about half of the calls they receive [1]. Surprisingly, front-line assistors answer 84 percent of taxpayer questions without referral [1].

When front-line assistors receive calls on tax topics in which they have not been trained, they refer taxpayers to more experienced assistors known as technical backups and specialists. Technical backups are assistors who have completed all three phases of assistor training, and have at least one year of experience; specialists are local domain experts who have completed training on more difficult tax topics and also possess considerably more experience than technical

backups. To answer the more difficult inquiries that are referred to them, technical backups and specialists often refer to sources such as the Internal Revenue Code and Regulations, IRS Letter Rulings, and commercial tax guides.

During fiscal year 1988, over 5,000 assistors responded to 38.5 million telephone inquiries, of which 13.5 million calls (35 percent) were technical questions on tax law [2]. On a typical day, an assistor will answer 150 taxpayer calls; of these, 53 calls will deal with tax law. Because these tax law questions can fall into one of 139 topics, even questions on the most frequently-asked topics amount to only 2 percent of total calls. Simple tax topics require assistors to recall up to ten key pieces of information; more difficult topics, such the Dependency Test discussed later, can often exceed 50 parameters.

Currently, when assistors cannot answer a question from memory, they find the appropriate IRS publication, and then refer to the index or table of contents. This may involve referring to one of 159 IRS publications or to one of ten volumes (totaling over 15,000 pages) of the CCH Standard Federal Tax Reporter. In view of the complexity of this task, it is perhaps not surprising that the quality of advice provided to taxpayers has been less than optimal [3]. According to GAO, 1988 filing season performance by front-line assistors in answering tax law inquiries was as follows: 58 percent were correct and complete, 6 percent were correct but incomplete, and 36 percent were incorrect [4].

Two Approaches: Text Retrieval Vs. Expert Systems

There are two projects under development at IRS that attempt to improve assistor performance in answering taxpayer inquiries. The Automated Taxpayer Service System (ATSS) focuses on text retrieval, while the Taxpayer Service Assistant (TSA) takes an expert system approach. The ATSS locates and displays text from a database of IRS publications. The TSA, on the other hand, prompts assistors to ask taxpayers a series of questions, and then provides advice and explanations of results based on taxpayer responses.

Text Retrieval Approach The approach taken by ATSS augments the way that the assistor task is currently performed. Text is retrieved from a computer database containing IRS publications, and possibly the Internal Revenue Code and Regulations, and other tax reference guides. This database is accessed by entering certain keywords. Whenever keywords match words in the text, those sections of text are retrieved and displayed.

One advantage of this approach is that tax law databases and extensive off-the-shelf text retrieval packages are readily available from commercial sources. Also, vendors keep their tax databases current through frequent updating. A further advantage is the relatively low cost-per-user of providing this capability. Finally, this approach requires no extensive software development for its use.

One disadvantage of text retrieval systems is that users will often access unwanted text or fail to locate appropriate text.

Assistors must, therefore, learn how to use keywords in logical combinations in order to restrict the amount of text retrieved. Revenue Canada's experience, although positive, indicated that at least one week of classroom training and several weeks of usage were needed to reach proficiency [5]. An unexpected drawback of text retrieval systems is the limited amount of text that is visible on a screen at any one time, as compared to print media.

However, the most serious deficiencies of this approach stem from the basic nature of the assistor task. Namely, text retrieval methods still leave the assistor with the tasks of reading, understanding, interpreting, and restructuring text into mental models, such as algorithms or decision trees, that can be used directly to answer taxpayer questions. In addition to arriving at accurate and complete answers, assistors must often provide explanations of their answers at a level that is understandable to taxpayers. Here again, the assistor must formulate a cogent explanation from text that takes into account the taxpayer's specific facts, and the relevant decision parameter(s). Thus, simply reading text is seldom adequate.

Expert Systems Approach The second approach, the one embodied in the TSA, uses expert systems technology to enable assistors to answer taxpayer inquiries directly. However, in order to accomplish this, both passive written knowledge (such as IRS publications and the tax code), and unwritten heuristic expert knowledge (such as rules of thumb) must be captured. These relevant parameters and their relationships are then restructured and encoded into an explicit, active form, such as a rule-based (if-then) expert system.

The TSA provides the following advantages:

- Shifts the burden of knowing, remembering, and reasoning about details of technical tax law from the assistor to the computer.

- Transforms knowledge into an active form from which decisions can be made, rather than passive text or informal unwritten heuristics.

- Accesses only relevant data needed for decision-making.

- Explains how decisions and advice were arrived at in a way that is specific to the taxpayer's situation.

- Explains the system's current state and the reasoning that led to that state at any point during a session with a taxpayer.

- Provides contingent advice when taxpayer data are missing or unknown; that is, specifies parameters and their allowable values that are still needed to reach an answer, and refers taxpayers to relevant pages in IRS publications.

- Embodies knowledge found in IRS publications and gives both advice and justification of results so that referral to IRS publications is seldom needed.

- Reduces referral of taxpayer questions to specialists by covering some portions of tax topics normally answered by specialists, allowing them to concentrate on answering only the most complex questions.

- Reduces "answer shopping" (repeat calls on the same question by taxpayers looking for a more favorable answer) by providing more accurate, complete, consistent, and unambiguous advice.

- Provides printouts of consultation sessions to taxpayers upon request, further reducing repeat calls, as well as avoiding the cost and delay in ordering IRS publications and mailing them to taxpayers.

- Helps assistors to learn tax topics through system use.

- Serves as a training aid in two modes: prototypical examples and exploratory.

- Stimulates insights by domain experts during the process of knowledge acquisition and elicitation that improve the way that knowledge is organized and structured.

However, there are disadvantages. The main disadvantage is that expert systems are hand-crafted: parameters, their relationships, and allowable values, must be determined through a lengthy process of knowledge acquisition from printed materials and knowledge elicitation from experts. In addition, screen interfaces must be designed very carefully in order to satisfy both novice and experienced users. Thus, the time required for system development is quite significant, especially if the entire breadth of the tax code is to be represented. A second drawback is that, although expert systems yield higher quality results, they currently require considerably greater computing resources than text retrieval systems, resulting in a higher cost-per-user.

Design Issues

A number of important issues are encountered in designing an expert system for use by IRS assistors. However, due to space limitations, only the following design issues will be discussed: knowledge representation, reasoning methods, and the explanation facility. Other design issues, as well as issues in the development, testing, and evaluation of the TSA, are discussed in a paper from the 1989 AI Systems in Government Conference Proceedings [6].

Knowledge Representation

Expert system designers attach great importance to, and spend considerable effort in determining the best schema for representing domain knowledge. This section will explore the issues of determining the proper level of detail at which to represent domain knowledge, finding common organizing principles in the domain knowledge, and finally, organizing that knowledge into a meaningful taxonomy.

How assistors pose questions to taxpayers can greatly influence the accuracy of taxpayer responses. Algorithms comprised of questions that are too general or vague, such as those found in IRS Publication 501 (see Figure 1), are of limited value. Seemingly simple questions asked in this algorithm for the Dependency Test conceal a great deal of embedded knowledge and many assumptions. For example, to correctly answer the third question ("Did the person file a joint return for the year?"), sometimes requires that the Filing Requirement tax topic first be answered before the Dependency Test can be completed (see note 3 in Figure 1). Figure 2 reveals more of the real complexity involved in answering the Dependency Test topic, while Figure 3 shows the level of detail needed to actually implement that knowledge in the TSA. In this case, nearly 250 rules and 50 parameters are required to cover this topic.

During development of the TSA, the author discovered an organizing principle that allows some tax topics to be structured into decision taxonomies comprised of "tests" and "options." For example, in Figure 2, each decision node (box) in the Dependency Test tax topic is classified as either a test or option. Therefore, as shown in Figure 2, all five tests must be passed in order to claim a person as a dependent. However, only one of three options that comprise the Support Test must be passed in order to pass that test. The implementation of these tests and options can be seen in Figure 3. The five tests are summarized at the top of Screens 1 and 2, and the more important options are organized in outline form. For instance, Screen 2 shows the three options under the Gross Income Test, and one of the three options for the Support Test.

Another serious deficiency of algorithms is that they do not reveal the hierarchical structure of tax knowledge. By making the structure of the tax knowledge explicit, the TSA gives assistors a roadmap to easily navigate through unfamiliar tax topics, helps them keep track of their progress in complex tax topics, and enables them to more easily form cognitive models of tax topics. Again, using the Dependency Test as an example, Figure 1 indicates no overall structure to the knowledge, while Figure 2 clearly shows its taxonomy. In Figure 3, this structure is implemented in the TSA as the status summary at the top of Screens 1 and 2, and as the outline form into which each test is organized. Screen 4 in Figure 3, the assistor's explanation of results, also illustrates the structure of the knowledge.

Reasoning Methods

A basic design decision involves choosing between two different reasoning methods: forward-chaining and backward-chaining. In forward-chaining reasoning, the system is data-driven -- it draws inferences or conclusions from data that it currently possesses. In backward-chaining reasoning, the system is goal-driven -- it traces backward from the goal through its decision tree until it reaches an end-point parameter for which it has no answer. Then the system asks the user to supply a value for that parameter so that it can draw conclusions, and then it continues in the same way until it possesses enough data to answer the taxpayer's question. Typically, only one question is displayed at a time in backward-chaining.

Figure 1. Algorithm for the Dependency Test -- from IRS Publication 501, "Exemptions, Standard Deduction, and Filing Information"

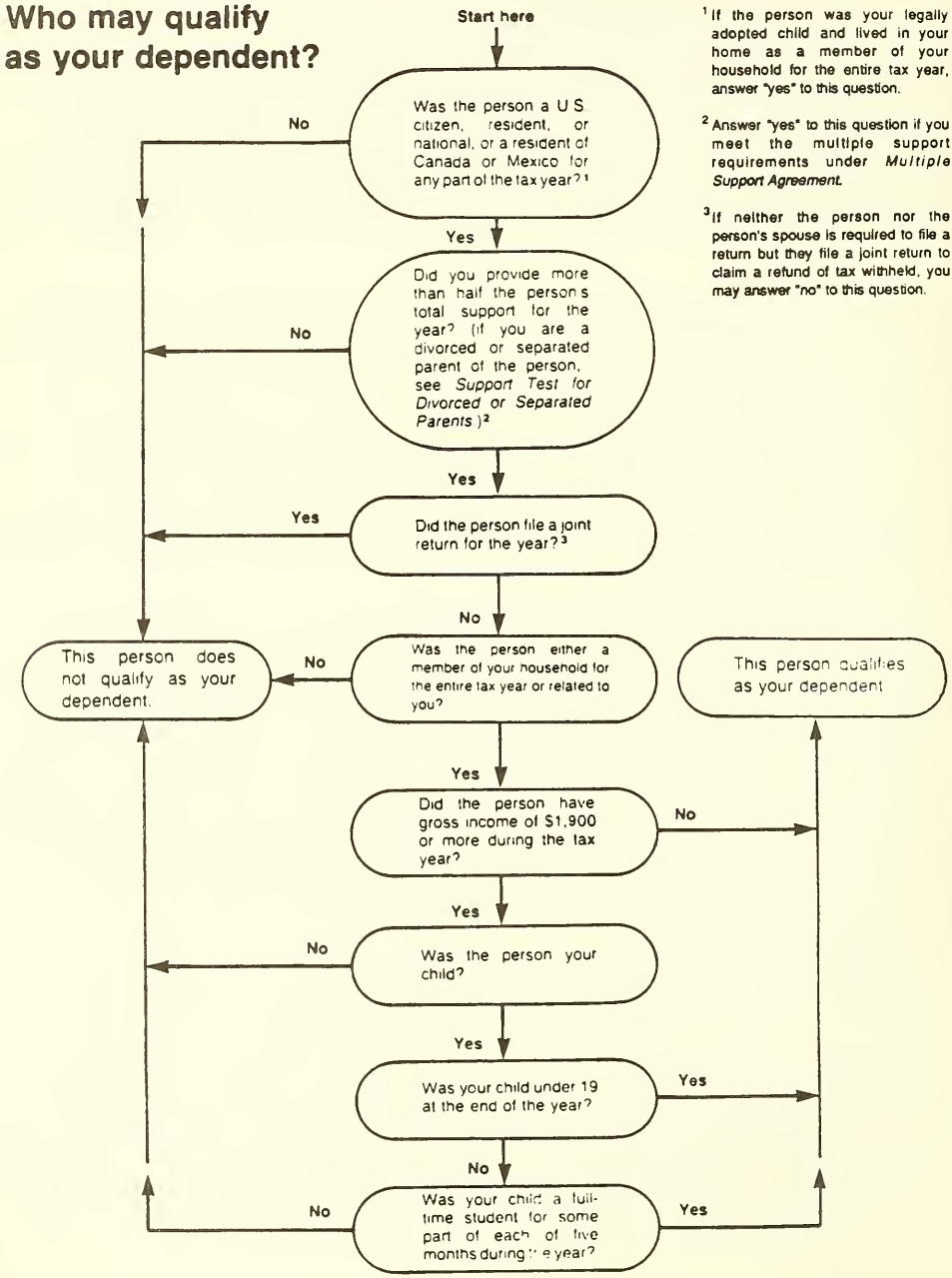

Figure 2. Detailed Structure of Domain Knowledge for the Dependency Test

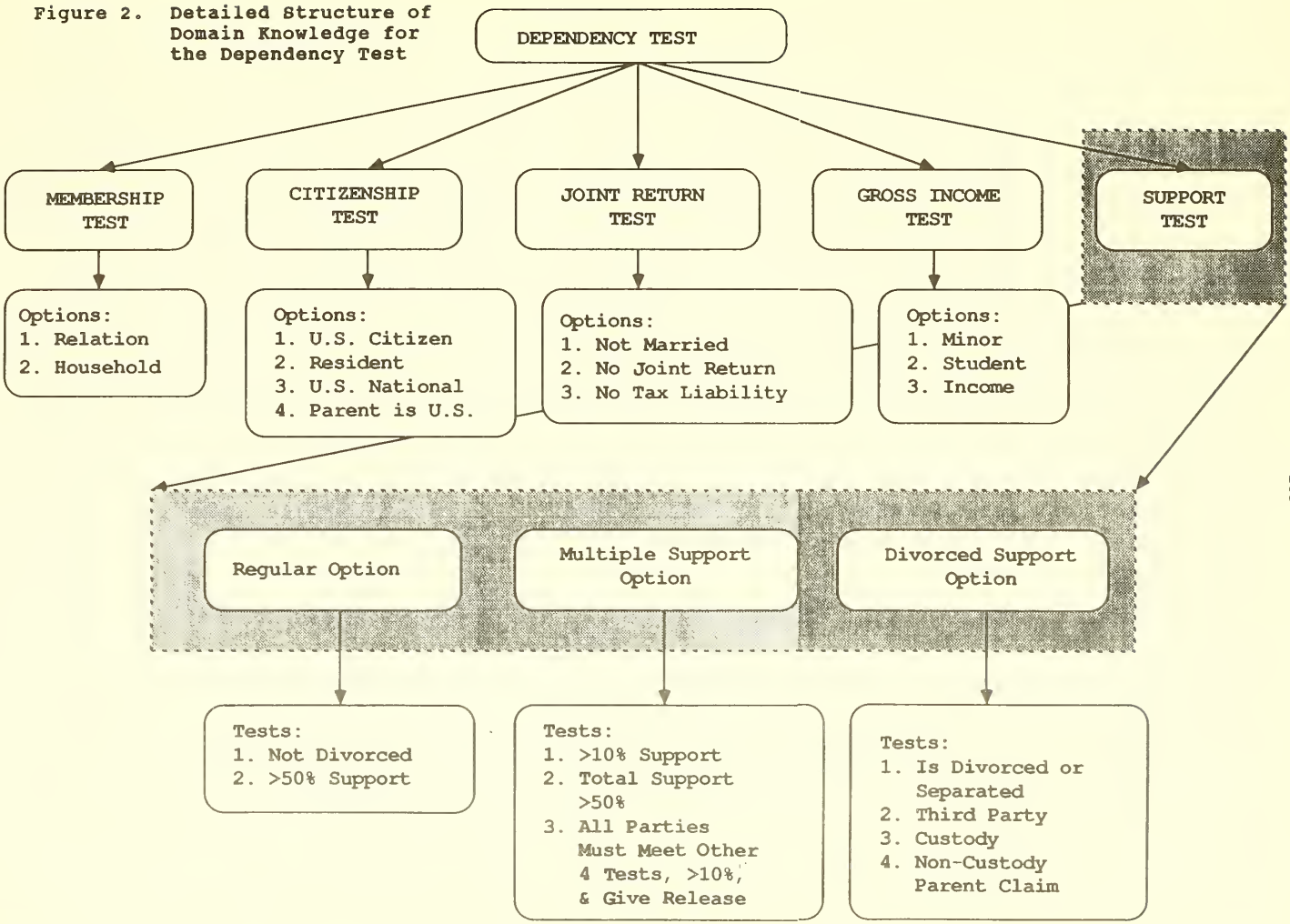

Figure 3. An Example of TSA Screens for the Dependency Test

Screen 1. Work Screen with Membership, Citizenship, and Joint Return Tests

```
* Dependency Tests Status *
Pass Dependency PASS     2. Citizenship  PASS     4. Gross Income PASS
1. Membership   PASS     3. Joint Return PASS     5. Support      PASS

* 1. Membership Test *                    * 2. Citizenship Test *
     Is person related?       YES          U.S. Citizen?        YES
1A. Relationship Option PASS                Resident?
     Direct blood?            CHILD        U.S. National?
     Indirect blood?                       Parent U.S. Citizen?
     By marriage?                          Foreign Student?
     Legally adopted child?
1B. Household Option                     * 3. Joint Return Test *
     In Household Entire Yr?               Person Married?          NO
     Type of Absence?                      Filed Joint Return?
     Household Employee?                   Tax liability if either
                                           spouse filed separately?
```

Screen 2. Work Screen with Gross Income Test and Regular Support Option

```
* Dependency Tests Status *
Pass Dependency PASS     2. Citizenship  PASS     4. Gross Income PASS
1. Membership   PASS     3. Joint Return PASS     5. Support      PASS

* 4. Gross Income Test *                  * 5. Support Test *
4A. Child Minor Option PASS                5A. Regular Support Option PASS
     Child under 19?          YES            Provide 100% of Support? NO
4B. Child Student Option                     Dep. Expenses -- Do Calc YES
     Student Status?                         + Lodging($) 1000
     >= 5 Mos. Full-Time?                    + Household  0
     Type of school?                         + All Other  0
4C. Gross Income Option                      = total Exp  1000  Unk Exp
     Tax Year?                               Claimant Support in % 60
   < Threshold Amount                        + Lodging($) 600
   + Gross Income?                           + Household  0
   - Allowable Expenses?                     + All Other  0
     Excludable Types                        - Not allwd  0      Type NONE
   - Excludable Income?                      = Total Supp 600    Unk Exp
```

Based on your answers, you may claim the person as your dependent.

Screen 3. Explanation of Results for Taxpayers

```
* EXPLANATION OF CONSULTATION SESSION *
IRS Office:                    IRS Assistor:                    Date:
ADVICE:  In order to claim your dependent as an exemption, you must pass
all five dependency tests.  Based on the information you have given us,
you MAY claim the person as your dependent.
EXPLANATION:  You have passed all five dependency tests as follows:
The Relationship Test was met because the person is your CHILD.
The Citizenship Test was met because the person is a U.S. citizen.
The Joint Return Test was met because the person was not married.
The Gross Income Test was met because the child was under 19 years old.
The Support Test threshold of 50% was met by providing 60 % of support.
```

Screen 4. Explanation of Results for Assistors

```
* EXPLANATION OF CONSULTATION SESSION *
IRS Office:                    IRS Assistor:                    Date:
TEST/OPTION    RESULT    PASSING VALUE       TAXPAYER VALUE
Dependency     PASS
Membership     PASS
  Relation     Pass      Direct Blood        CHILD
Citizenship    PASS      U.S. Citizen        U.S. Citizen
Joint Return   PASS      Not married         Not married
Gross Income   PASS
  Minor Opt    Pass      Child <19 years old
Support Test   PASS
  Regular Opt  Pass      >50%                60 %
  Divorced     Not-Qual  Divorced/Separated  Not Divorced or Separated
```

The nature of the assistor task exerts a strong influence on the choice of reasoning method. Taxpayer inquiries better resemble unstructured conversations, or taxpayers telling stories [1], rather than structured exchanges of information controlled by assistors. As a result, taxpayers tend to provide information in a sequence that they find most comfortable, rather than the sequence that best suits assistors.

Forward-chaining systems, such as the TSA, provide much greater design flexibility than is available using backward-chaining systems. First, taxpayer data can be entered in any sequence. This is important because backward-chaining systems prescribe a fixed sequence of questions that may not correspond to the order in which data are received from taxpayers. In addition, data-driven systems make it simple for users to change taxpayer data that already have been entered. Furthermore, forward-chaining systems are generally better able to display the structure of tax topics (see Screens 1 and 2 on Figure 3). This facility enables the system to easily display the progress of an inquiry and summarize its current status. Finally, the TSA can produce explanations and justifications of its advice that are customized for each taxpayer's situation (see Screens 3 and 4 in Figure 3).

Explanation Facility

One of the major advantages that expert systems have over conventional programs is the ease with which systems not only can explain and justify their conclusions and results after a consultation, but also can explain their reasoning during processing. A good explanation facility yields the following benefits:

- Improves assistor acceptance of and confidence in system
- Provides customized explanations for taxpayer's situation
- Helps assistors in learning tax topics
- Aids in detecting errors and testing solutions in the system

The TSA provides two types of explanation of results, one for taxpayers, and another for assistors (Screens 3 and 4 in Figure 3). Taxpayers receive advice and an explanation in English sentences; assistors see the session results in an abbreviated, tabular format. In addition to seeing the results from each test, assistors also see results from all options answered by the taxpayer; each line in the table consists of an option or test name, its allowable values, and the values given by the taxpayer. The TSA also gives advice even when taxpayer data are missing or not known by providing the current status of the call and referring the taxpayer to relevant IRS publications.

Future Project Development

Much work is still required to field a fully operational system. The TSA feasibility prototype has been completed and successfully tested during the 1989 filing season. A modified version of the TSA is being developed into a full-scale operational prototype that will be tested by all front-line assistors during the 1990 filing season at the Boston District toll-free telephone site.

The strategies to be employed in later stages of project development may differ substantially from those used in the prototype stages. Experienced practitioners have expressed the belief that developing serious systems inevitably involves building custom shells and interfaces [7]. An expert system shell is a software tool from which the domain knowledge (often in the form of rules) has been removed, leaving only the mechanism that reasons about the rules and a formal structure into which rules can be entered. The author's experiences in developing applications using different expert system shells confirm the opinion that building custom shells may be both necessary and desirable.

There are many benefits to be derived from building custom expert system shells. Inevitably, for nearly every application, some custom code needs to be written in order to fill in the gaps of needed functionality and flexibility that current shells lack. Custom shells allow functionality to be integrated directly into the shell. Not only can shell developers understand and determine what features are needed, but they also can enhance existing features and add new features as needed. Commercial vendors do not allow developers access to shells so that features can be altered or added. A further benefit is that custom shells can be written in compact languages that allow applications to be delivered in a limited amount of memory.

In the next stage of development, the TSA will come face-to-face with the well-known "scaling-up effect." Early developers of large rule-based expert systems, such as DEC's XCON, encountered rapidly increasing difficulties when systems grew in size to several thousand rules. They found that errors became harder to detect and correct, and that controlling system execution, managing complexity, and adding knowledge became more difficult. Although this was not a concern for the initial few tax topics in the TSA, it takes on additional importance as the knowledge base grows in size, past 50 tax topics, towards an operational prototype.

Eventually, developers found that other means of representing and organizing knowledge, such as object-oriented programming, provided solutions to many of the problems resulting from the "scaling-up effect." Object-oriented programming also makes sharing of knowledge between tax topics, and moving directly between related tax topic modules much easier. Furthermore, this technique has the advantage of allowing multiple system developers to work independently from one another. At present, the TSA uses a mixed-knowledge representation schema that includes rules, frames, and daemons.

For the full-scale implementation of the TSA, a "bomb-proof" version should be constructed for direct use by taxpayers. Such a direct-access system could serve several taxpayer groups: walk-in taxpayers at IRS sites using a touch-screen, taxpayers with computer and modem access at remote sites, such as commercial computer bulletin boards and databases, or taxpayers dialing a dedicated 800-number equipped with touch-tone technology.

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Highlighting Recent Advances in IRS Volunteer Programs--Understanding Taxes

by
Fred Jacobs
Taxpayer Service Division
Office of Assistant Commissioner
(Taxpayer Service and Returns Processing)

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Understanding Taxes (UT) is an Internal Revenue Service Taxpayer Education Program aimed primarily at high school students. It has undergone significant expansion and modification since its inception over 30 years ago. UT program materials now have a new modular format backed by videocassette programs, computer software, and traditional instructional materials. This article examines the evolution and recent redesigning of the UT program.

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Background

UT was created in 1954 in response to teacher demand for materials on taxation. This program was originally circulated to teachers in the Washington, D.C. area. By the late 1950's, materials were being distributed nationwide. The initial scope of the project dealt with instructions on taxpayer rights and responsibilities that were designed to be incorporated into existing high school curricula.

In 1981, a study was undertaken to determine if modifications were needed to make the UT program more useful. As a result, the program was expanded and reorganized. A cooperative venture was established with private, nonprofit organizations and state government representatives concerned with education. Other organizations that joined the IRS in this educational effort were the Joint Council on Economic Education (JCEE), the Agency for Instructional Technology, education and communication organizations of the 50 states and the District of Columbia, and the National Association of Tax Administrators (NATA).

In 1985, a six-part video series, "Tax Whys: Understanding Taxes," was produced. This new series dramatized issues such as the use of tax revenues, tax credits and how they influence behavior, taxation and conflicting goals, and the different types of taxes. In 1986, the teacher's guide for UT was revised to integrate these videos making UT appropriate for many types of classes.

Modification of The UT Program

In the 1981 study, a task force prepared a report based on written evaluations of the UT Program, educational research studies, and discussions with teachers using this program, with IRS and state revenue personnel, and with state and federal educational staff. The report recommended the following important changes.

- Broaden the scope of the program to encompass other ideas besides the mechanics of preparing tax forms. Some of these new ideas include basic economic theories on which federal tax law is founded and the role of Congress in writing the tax laws.

- Emphasize the development and use of appropriate audiovisual materials to complement the program. In 1984, the new film series "Tax Whys: Understanding Taxes" was developed with the assistance of the JCEE and the Agency for Instructional Technology (AIT).

- Train teachers to use the UT materials. Since 1984, teacher training workshops have been conducted by JCEE. These workshops have been instrumental in publicizing the UT program in the educational community, in helping teachers understand how to use the UT program, and in helping this program gain a greater degree of acceptance.

- Invite state revenue officials to participate in the UT program by developing a state tax module for use with IRS materials. There are several advantages to this recommendation. Providing teachers a module on state tax systems would be an incentive to the state department of revenue to develop specific state tax information for teachers and students. By working with the Federation of Tax Administrators (FTA) and the directors of state revenue departments, modules on the tax systems of several states have subsequently been added to the UT program. In addition, the UT program received the endorsement and support of the FTA for use in the states.

A Needs Assessment

In February 1987, another study was conducted on UT materials entitled, "Tax Education--An Assessment of Needs at the Secondary Level." The purpose of this study was to answer questions regarding Understanding Taxes and the film series "Tax Whys." Some of the issues included how the two series could be perceived as part of one program, and how the subject of taxes could be integrated into each school's curriculum. Part of this needs assessment consisted of phone call interviews around the country to IRS Taxpayer Education Coordinators and Joint Council of Economic Education Center Directors. In addition, a two day field study in San Francisco and a four day field study in North Carolina were conducted. The following points summarize the results of the interviews and field study:

- There was little perception that UT and the film series "Tax Whys" were part of the same set of instructional materials.

- However, this separation may have helped the materials reach a wider audience.

- The tax forms play two important roles in taxpayer education: (1) students are curious about tax forms (the forms serve as a motivational function), and (2) learning how to fill out the forms is a part of the school's citizenship education.

A written survey of 2,890 teachers was also part of the needs assessment. Mailing lists were obtained from the National Council on Social Studies, the Joint Council on Economic Education, and Quality Education Data. Of the teachers surveyed, 1,130 responded, for a response rate of 39.1 percent. Some important findings from the survey are summarized below:

- A majority of teachers (72.9 percent) said they teach taxation in their classes, and three-quarters of the remaining 27.1 percent said they would be interested in teaching taxation. Interestingly, 41 percent of all teachers had some special training in taxation. Most of the special training occurred in either undergraduate education or in taxation workshops held specifically for the teachers.

- Of the teachers who teach taxation, 32.9 percent had heard of either UT or "Tax Whys;" only 36.9 percent had heard of both series. Of teachers who had heard of UT, 34.3 percent said they were using it. Of the 41.2 percent who said they had heard of "Tax Whys," only 12.9 percent reported using it.

- Regarding the time of year when taxation was taught, 36.7 percent of teachers said they taught it during the tax season (January 1 through April 15), while 56.9 percent said they taught it when it fit into their curriculum. Most of the remaining 6.4 percent of the teachers said they only taught taxation when students asked questions about it.

- There was a difference in the time of year in which taxation was taught when the sample was split between teachers using only "Tax Whys," teachers using only UT, and teachers using both series. The most interesting result was for teachers using only "Tax Whys;" 88.1 percent were guided by their curriculum rather than the tax calendar.

- Teachers could learn about either UT or "Tax Whys" from the IRS, from the JCEE, or from other teachers. Table 1 lists the means by which teachers learned about the two series.

Table 1. Means By Which Teachers Learned About The Series

Understanding Taxes		Tax Whys	
IRS	40.2 %	IRS	21.4 %
JCEE	24.8	JCEE	53.9
Word-of-Mouth	21.1	Word-of-Mouth	15.4
Other	13.9	Other	9.3

- For teachers using UT, 80 percent report using Chapter 1, "Taxpayer Rights and Responsibilities," and 87 percent use Chapter 2, "How to Prepare an Income Tax Return." The rest of UT was used by about one-third to one-half of the teachers sampled. From these results, the primary use of UT was to teach students how to prepare an income tax return.

- Use of the various "Tax Whys" programs was more balanced. Each of the six programs was used by almost one-third of the sample. No one program seemed to be used the most.

One of the main purposes of the written survey was to ascertain what three out of seven topics teachers would like to see added to the "Tax Whys" video series. The teachers prioritized the seven topics as follows:

1. How To Fill Out Tax Forms
2. U.S. History of Taxation
3. How Tax Legislation is Created and Becomes Law
4. Philosophy of Taxation
5. How Taxes are Collected
6. State Income Tax Systems
7. World History of Taxation

Results of the survey suggest that these two series should be consolidated in order to make the program more attractive to teachers and more effective overall as an educational tool. This led to a complete redesign of the UT program materials with a new modular format backed by videocassette programs, computer software, and other instructional materials. The content of the materials for UT makes the course appropriate for history, economics, mathematics, vocational education, government, civics and business classes. Two videoconferences, one for students and another for teachers, were conducted to introduce the new "Understanding Taxes Teacher's Resource Package" to students and teachers across the country. These programs originated in Washington, D.C. and were connected by satellite to downlink sites established by the JCEE.

The new resource package program provided to teachers includes a videocassette featuring nine programs--the six existing "Tax Whys" plus three new programs. Computer software for use with Apple II computers is also included. During fiscal year 1988, more than 55,000 resource packages were distributed to nearly 30,000 schools.

Results from the first year show that teachers have responded favorably to the revised program. Of the teachers evaluating the program, 88 percent found UT's subject matter covered taxes either thoroughly or adequately enough. Almost all of them agreed the students' knowledge of the subject matter was improved by taking the course. It was discovered that teachers use the resource package primarily in business, education, and economics classes; however, it is also being used in vocational education, home economics, consumer education, civics, government, and other classes.

Future Directions

One of the recommendations of the 1981 study was that the UT program should expand its target audience to include junior high and post-secondary school audiences in an effort to reach a broader spectrum of the population with this basic information. This recommendation was considered desirable, especially in light of a 1979 U.S. Controller General report. This report revealed that nearly a third of all non-filers had eight years or less of schooling, making it clearly important to reach this group with UT information. This year, on the recommendation of the JCEE and the Agency for Instructional Technology, work has begun on materials designed specifically for eighth grade students. In addition, a study is underway with the JCEE to determine the suitability of the existing materials for wider use beyond high school.

Conclusion

There is a dual purpose of UT. First, it teaches students how to fill out their own tax returns. This is very important since the Tax Reform Act of 1986 imposed new rules that require increasing numbers of dependent students to file tax returns. The second purpose is to instill in students an understanding of the history, politics, and economics of the nation's tax system. With this increased understanding of the tax system, and as this project increases scope to include younger students, attitudes towards tax compliance and the IRS will be positive.

The Tax Supplement -- New Approaches to Media Placement Problems

by
Fred Jacobs
Taxpayer Service Division
Office of the Assistant Commissioner
(Taxpayer Service and Returns Processing)

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Each year, the Taxpayer Service Division produces the Tax Supplement, a digest of short, tax-related articles on such topics as general filing tips, changes in the tax law, and electronic filing. The Division has implemented some innovative techniques in a effort to increase this document's exposure, especially among small and weekly newspapers. This article examines two of these techniques for increasing newspaper publication of the Tax Supplement.

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Background

The **Tax Supplement** is produced in camera-ready form and is distributed to IRS Regional and District Public Affairs Officers (PAOs) for placement in daily and weekly newspapers. The camera-ready material, or "hard copy," has some drawbacks when it is intended for publication in weekly or small (circulation of 50,000 or less) daily newspapers. These newspapers do not always have sufficient staff to edit and re-typeset the copy of the **Tax Supplement** for printing in their publication. Therefore, the exposure of the **Tax Supplement** is limited to the major daily newpapers that can use the "hard copy."

To increase exposure of the **Tax Supplement**, it must be available to the large volume of small daily and weekly newspapers. According to the 1988 edition of the **Gale Directory of Publications**, there are over 9,000 weekly and 1,649 small daily newspapers, as compared to approximately 200 major daily papers. Some daily and larger weekly newpapers are part of chains equipped with their own on-line wire services, similar to Associated Press (AP) and United Press International (UPI). However most of the weekly papers consist of one- or two-person operations using desktop publishing computer systems to typeset and lay out the paper, which is then printed and distributed by an outside printer.

The Taxpayer Service Division developed two innovative approaches in order to provide a copy of the **Tax Supplement** in a more readily usable form for the small and weekly newspapers. These two approaches will also increase publication of the **Tax Supplement**. The first approach is the transmission of the **Tax Supplement** to AP and UPI subscriber newspapers in an attempt to increase publication of the supplement in daily newspapers, larger weeklies, and weekly chains. The second idea is to transcribe the supplement onto computer diskettes for use with desktop publishing computer systems used by the smaller weekly papers. In the following two sections these approaches will be explained and described as appropriate for use by either weekly, small daily, or major daily newspapers.

AP/UPI Transmission

Many smaller daily newspapers use some type of computer data-based composing and typesetting system to write, edit, and compose a copy. Copy can also be received from the wire services (or their own chain news service). As most of the smaller daily papers face the same staff constraints suffered industry-wide, they increasingly rely on the wire services to provide the majority of their news and feature copy in a format that they can conveniently use. Considering this basic operating practice, the **Tax Supplement** "hard copy" is obviously an impractical medium for these newspapers.

The major metropolitan daily newspapers fail to use the **Tax Supplement** "hard copy," not so much for lack of sufficient staff to re-typeset the copy, but rather out of an endemic reluctance on their part to use any wire service or "canned" feature material. This is largely due to the industry practice of evaluating papers as to how much news and feature material they actually produce themselves for their paper, versus how much news/wire service copy they use. If the **Tax Supplement** is used by these publications, it will often be as background for a reporter or feature writer who is doing a tax piece. Nevertheless, with the pressure of deadlines playing a critical role in the daily operations, time saving methods are still important. Therefore, electronic transmission is an effective means of furnishing the **Tax Supplement** to major daily papers.

IRS District and Regional Public Affairs Officers (PAOs) are involved in the marketing of the **Tax Supplement** by contacting Associated Press subscribers to determine if they have equipment capable of receiving the transmission and if they, in fact, want to receive the **Tax Supplement.** If the subscriber does not want the copy via wire service, the PAOs may try to market the "hard copy," or see if the paper wants the **Tax Supplement** in a computer disk format.

The actual transmission of the **Tax Supplement** is a relatively simple process. Text files are taken from the Taxpayer Service Division word processing program and provided to a computer typesetting and transmission service. The computer typesetting service converts the document to a format which can be received by the AP and UPI subscriber equipment. On a predetermined date, the **Tax Supplement** is "fed" to the wire service subscribers by the typesetting/transmission service via the AP/UPI networks. Table 1 shows the number of AP and UPI subscribers receiving the **Tax Supplement.**

Table. 1 Wire Service Electronic Transmission Placement

AP Subscribers Receiving Tax Supplement	571
UPI Subscribers Receiving Tax Supplement	369
TOTAL	940

Diskette Format

In the summer of 1988, the Taxpayer Service Division began work on plans to transcribe the **Tax Supplement** copy onto computer diskettes for use by small daily newspapers and weekly papers using desktop publishing systems. This initially involved polling Regional and District PAOs to find out the type and number of diskettes needed. The response by newspapers contacted was enthusiastic, with over 2,000 requesting the **Tax Supplement** in diskette form. This total is over two times the number of newspapers receiving the **Tax Supplement** via AP/UPI electronic transmission.

Results

The following results (see Table 2) reflect the overall publication rate for complete, partial, and total **1988 Tax Supplements** as reported by Burrelle's Advertising Analysis Service. This service provides information on the number of whole and partial **Tax Supplements** printed in daily and weekly newspapers, and magazines. Additionally, this service provides the estimated equivalent advertising value which represents what the advertising space in the publications which run the **Tax Supplement** would cost if the IRS paid for advertising. Burrelle's also provides circulation data on the number of **Tax Supplements** published.

Table. 2 Tax Supplement Publication

	Number Published	Circulation	Equivalent Advertising Value
Entire Tax Supplement Published	1,050	21,884,169	$6,480,079
Partial Tax Supplement Published	889	13,413,716	$ 199,930
Total Entire/Partial Tax Supplements Published	1,939	35,297,885	$6,800,009

Conclusion

Since the use of both the major news wires and diskettes increased exposure for the **Tax Supplement**, it becomes only a matter of time before all of Taxpayer Service Division's print news media is provided using these techniques. However, efforts should not be limited to solely these two techniques. For example, there are many computer data-based information services that require a simple telephone line or modem link (unlike the news wires which have their own separate network) that could be used to disseminate print products. The trend in the newspaper industry toward increased automation and the rising use of computer systems, like desktop publishing, will certainly continue. Consequently, the Taxpayer Service Division must be alert to these trends in their search for better methods of providing its print products to the media.

Impacts of the Tax Reform Act of 1986 on the Income Tax Withholding System

by
Alan H. Plumley
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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The Tax Reform Act of 1986, in making sweeping changes in the Internal Revenue Code, had an enormous impact on the income tax withholding system. Among other things, the Act changed the value of a withholding allowance, necessitating that each employee file a new Form W-4. This focused attention on the trade-off between the accuracy and the simplicity of the system.

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Introduction

In addition to changing the rules concerning what is taxable, who pays the tax, and how much they are to pay, the Tax Reform Act of 1986 changed several very fundamental aspects of the withholding system--the primary mechanism by which individual income taxes are collected. In addition, the Act specified that the withholding system be modified "to better approximate actual tax liability," [Section 1581(a)]. Offsetting this requirement was the implied desire that the withholding system be as simple as possible--especially since the Act required all employees to file a new withholding certificate (Form W-4) in 1987. The controversy that ensued after the 1987 Form W-4 was introduced illustrates both the significant impact of the Tax Reform Act on the withholding system, and the difficulty of achieving an acceptable balance between accuracy and simplicity.

Changes in the Law

The changes in the tax law having the greatest impact on withholding are presented in Table 1 and Figure 1. These fall into four major categories:

1. Personal exemptions: These were virtually doubled.

2. Deductions: Fewer outlays are now deductible, but the standard deductions have increased significantly.

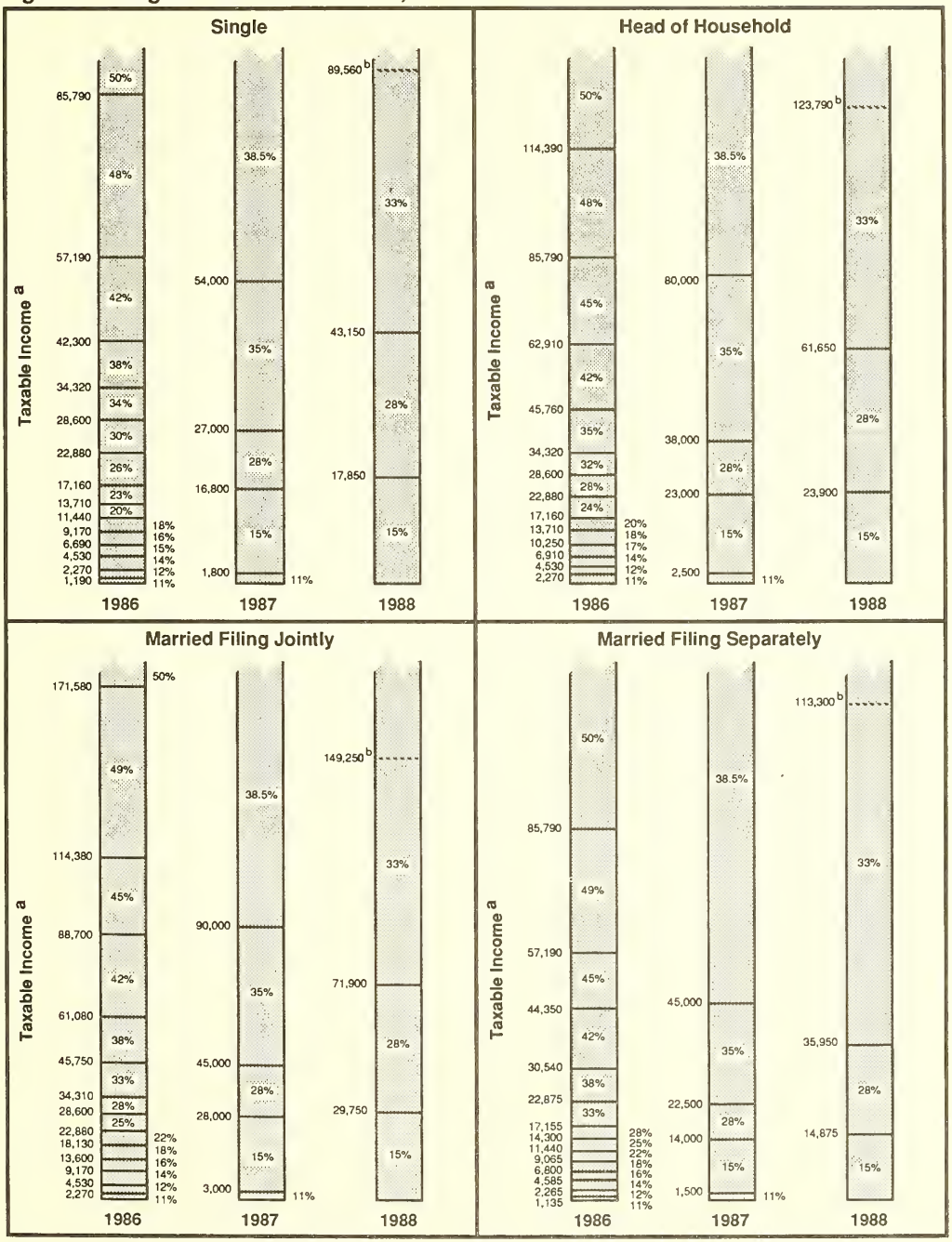
3. Earned Income Credit: The income below which a taxpayer is eligible for the EIC increased from $11,000 in 1986 to $18,576 in 1988, and the maximum amount payable increased from about $550 in 1986 to $874 in 1988.

4. Marginal tax rates: The number of rate brackets was reduced from fourteen in 1986 to five in 1987 and to four (effectively) in 1988 and beyond. [1] Moreover, the rates themselves were reduced from a maximum of 50 percent to a maximum of 33 percent.

Table 1. Summary of the Transitional Provisions of the Tax Reform Act of 1986

	1986	1987	1988	1989	1990	1991
Personal Exemptions	1,080	1,900	1,950	2,000	indexed	indexed
Deductions						
Standard Deduction						
- Single	2,480	2,540	3,000	indexed	indexed	indexed
- Married (Joint)	3,670	3,760	5,000	indexed	indexed	indexed
- Married (Separate)	1,835	1,880	2,500	indexed	indexed	indexed
- Head of Household	2,480	2,540	4,400	indexed	indexed	indexed
- Qualifying Widow(er)	3,670	3,760	5,000	indexed	indexed	indexed
Consumer Interest	100%	65%	40%	20%	10%	none
Earned Income Credit						
Percent of income	11%	14%	14%	14%	14%	14%
Maximum credit begins	5,000	6,080	6,240	indexed	indexed	indexed
Phaseout begins	6,500	6,920	9,840	indexed	indexed	indexed
Ineligible	11,000	15,432	18,576	indexed	indexed	indexed

Figure 1. Marginal Tax Rate Brackets, 1986-1988



[a] For comparability across years, taxable income in 1986 is defined as the amount over the "Zero Bracket Amount."
[b] The marginal tax rate drops back to 28 percent for taxable income greater than this amount plus $10,920 per exemption.

The most significant of these changes with respect to withholding is the doubling of the personal exemption amount. This is because withholding allowances are defined to have the same value as a personal exemption. In completing their Form W-4s, employees claim one allowance for each person for whom they will claim an exemption when they file their tax returns. They can also claim additional allowances to compensate for itemized deductions, adjustments, and credits they expect to claim on their returns. Now that the value of an allowance has roughly doubled, taxpayers may still claim one per person, but can claim only about half as many for a given level of deductions and adjustments. Because this and the changes described below affected so many people, Congress required in the Tax Reform Act that all employees recalculate their withholding allowances and submit a new Form W-4 to their employers by October 1, 1987.

Groups of Taxpayers Most Affected by These Changes

The withholding system has built into it the values of personal exemptions and standard deductions, as well as the rate structure for both the single and the married filing jointly statuses. However, certain groups of taxpayers are affected by the Tax Reform Act in ways that are not automatically accounted for in the withholding system. Many of the people in these groups needed to change their withholding allowances in 1987, and still more should have done so in 1988 because of various transitional features of the Act.

Itemizers

Those who itemize deductions or who claim statutory adjustments may be affected in several ways by the Tax Reform Act:

- Some outlays that had been deductible (such as state and local sales taxes) are no longer deductible; the deductibility of other outlays (e.g., consumer interest) is being phased out; and further restrictions are being placed on the deductibility of still other expenses (e.g., medical expenses). These changes in the rules will decrease the dollar amount of itemized deductions.

- Other outlays (e.g., charitable contributions) are now deductible only if the taxpayer itemizes deductions. While this will not affect those who continue to itemize, nonitemizers who had previously deducted such outlays may need to reduce their withholding allowances.

- The increase in the standard deductions (especially from 1987 to 1988) combined with the doubling of the value of an allowance will mean not only that fewer people will itemize deductions, but that those who continue to itemize may have to change the number of allowances they claim for these deductions--even if the amount of their deductions remains unchanged. Table 2 illustrates, as an example, the extent to which people who file returns with $5,000 of itemized deductions and $2,000 of adjustments would need to change their withholding allowances because of these two changes.

Table 2. Change in the Value of $5,000 of Itemized Deductions Plus $2,000 of Statutory Adjustments, Measured in Dollars Exceeding the Standard Deduction and in the Corresponding Number of Withholding Allowances, By Filing Status, 1986-1988

	Dollar Value			No. of Allowances[1]		
Filing Status	1986	1987	1988	1986	1987	1988
Single	4,520	4,460	4,000	4	2	2
Married, Joint	3,330	3,240	2,000	3	2	1
Married, Separate	5,165	5,120	4,500	5	3	2
Head of Household	4,520	4,460	2,600	4	2	1

[1] Rounded to the nearest whole number.

The table illustrates that someone having $5,000 in itemized deductions and $2,000 in adjustments should have reduced the number of withholding allowances he claimed on his Form W-4 by 2 or 3 between 1986 and 1988, depending on his filing status. (Taxpayers with larger amounts of itemized deductions and adjustments should have reduced their withholding allowances even more.) The need to make these changes arose simply because the values of the standard deduction and the withholding allowance were changed by the Tax Reform Act. If such employees fail to reduce their allowances in this way, they will have a smaller percentage of their tax liability withheld than was withheld in previous years--perhaps resulting in significant underwithholding and prepayment penalties.

Taxpayers Who Are Blind, or Age 65 or Over

Prior law granted an extra personal exemption for each person who was blind and for each person aged 65 or more. This was handled very easily on previous Form W-4s because of the one-to-one correspondence between personal exemptions and withholding allowances. The Tax Reform Act changed this in two significant ways: (1) the extra exemptions were replaced by smaller amounts ($600 for married taxpayers and $750 for all others) to be added to the relevant standard deductions, and (2) as a transition, these people were allowed to use the much higher 1988 standard deductions in 1987. The impact of these changes is illustrated in Table 3. Many of these taxpayers needed to decrease their withholding allowances in 1987 because their exemptions were replaced by smaller deduction amounts while the value of an allowance doubled, and many should have dropped an allowance in 1988 because they will no longer be granted higher standard deductions than the general public.

Heads of Households

In the past, heads of households faced a unique marginal rate structure but the same standard deduction as singles. Since they were withheld as singles, they were usually overwithheld. The Tax Reform

Table 3. Extra Allowances for the Blind and Aged, by Status, 1986-1988

Status	Bonus Using 1988 Standard Deduction in 1987	Extra Blind/ Aged Amount	Total	Number[1] of Extra Allowances		
				1986	1987	1988
Single						
Blind or Aged	$ 460	$ 750	$1,210	1	1	0
Blind and Aged	460	1,500	1,960	2	1	1
Married						
1 Blind or Aged	1,240	600	1,840	1	1	0
2 Blind or Aged	1,240	1,200	2,440	2	1	1
3 Blind or Aged	1,240	1,800	3,040	3	2	1
Both Blind and Aged	1,240	2,400	3,640	4	2	1
Head of Household						
Blind or Aged	1,860	750	2,610	1	1	0
Blind and Aged	1,860	1,500	3,360	2	2	1

[1] Rounded to the nearest whole number.

Act made them completely unique by granting them a distinct standard deduction--closer to that of married taxpayers than single taxpayers. However, this difference took effect in 1988 rather than in 1987. As a result, the 1987 withholding system did not give heads of households any special treatment. The 1988 Form W-4, however, enabled heads of households to claim one extra withholding allowance. (Their standard deduction will be $1,400 larger than singles', or 72 percent of one withholding allowance.)

Dual Earners

While itemizers are entitled to claim additional withholding allowances to compensate for their deductions, many dual earners (i.e., those who will file tax returns that include wages from more than one concurrent job) should reduce the number of allowances they claim. This is because each of the jobs is withheld as if it were the only job on the return. The withholding tables grant one standard deduction **per job**, whereas taxpayers are entitled to only one standard deduction **per return**. Moreover, income from a secondary job is taxed according to the combined income on the return, but is withheld as if it is the only source of income--starting at the lowest rates. If dual earners do not compensate for these factors, they are likely to be significantly underwithheld.

Prior to the Tax Reform Act, dual earners had several ways to increase their withholding: not claiming the Special Withholding Allowance available to other taxpayers; claiming fewer allowances for

itemized deductions, adjustments and credits; married employees asking to be withheld according to the higher rates used for singles; and asking to have a specific additional dollar amount withheld from each paycheck. Because of the need for greater accuracy, the 1987 Form W-4 included the first explicit method for dual earners to calculate how many allowances they should forego and, if necessary, what additional dollar amount should be withheld from each paycheck. This approach was simplified for the 1987 Form W-4A.

The actual provisions of the Tax Reform Act affected dual earners, too. First, working couples can no longer claim the special two-earner deduction. Second, since the standard deductions increased (especially in 1988), the potential for underwithholding is increased, since each job is given a standard deduction in the withholding tables. Possibly offsetting this effect, however, is the drastic reduction in the number of marginal rate brackets. This reduction could mean that, even though each job is withheld starting at the lowest rates, the withholding rate will usually be closer to the marginal rate at which the income will eventually be taxed. Together, these provisions mean that many dual earners needed to change the number of allowances they claimed--in either 1987, 1988, or both--in order to maintain the same relative withholding position.

Accuracy vs. Simplicity

To underscore its desire for better withholding accuracy, Congress required in the Tax Reform Act that taxpayers prepay at least 90 percent of their eventual tax liability (up from 80 percent) through withholding and/or estimated tax payments. Though the accuracy of the withholding system has been improving over the years, this requirement necessitated making the Form W-4 calculations even more precise and more comprehensive. But it also meant that the form would become more complex. The 1987 Form W-4 was four pages in length--including a one-page table for dual earners and over one page of instructions. Public reaction to this form was overwhelmingly negative, indicating clearly that the form needed to be simplified--even at the expense of some accuracy.

The 1987 Form W-4A that was unveiled by the Commissioner on March 2, 1987 was simpler than the original Form W-4 in the following ways:

- it was two pages in length--instead of four;
- one allowance could be claimed by employees if they (or their spouses) were blind or at least age 65--instead of calculating the exact amount they were entitled to;
- one allowance could be claimed by employees if they expected to incur at least $1,500 of child or dependent care expenses for which they could claim a tax credit--instead of calculating the exact amount they were entitled to;
- itemizers were instructed to divide the dollar amount of deductions and adjustments by $2,000 (a round number) to arrive at the number of allowances to claim for these deductions--instead of dividing by $1,900 (the value of one allowance);

- the "Two-Earner/Two-Job Worksheet" was greatly simplified, incorporating two small tables--instead of a full page of tables; and

- based on field testing of alternative forms with taxpayers, the instructions, flow, and layout of the form were simplified.

Where these changes affected the accuracy of the form, they were generally in the direction of overwithholding--both to minimize the possibility of taxpayers being subject to a penalty for not prepaying sufficient tax, and because of taxpayers' preference (in general) for refunds as opposed to having balances due. The 1987 Form W-4A was received by the public much more sympathetically than the long form, though by the time it became widely available most employees had already filed the Form W-4.

Because the Form W-4A struck a better balance between accuracy and simplicity, the same basic approach was taken in the development of the 1988 Form W-4. It went even further by obviating the need for married dual earners with combined incomes less than $40,000 to complete the Two-Earner/Two-Job Worksheet. Instead, the form simply suggested that they forego one of their allowances. This should greatly simplify the process of filling out the form for many dual earners, and help to minimize mistakes--especially since the field testing found that the dual earner worksheet was the source of much confusion, even on the 1987 Form W-4A.

One of the major uncertainties concerning the impact of tax reform on withholding was how well taxpayers would comply with the requirement to file new Forms W-4. If they did not file new forms with their employers (with the number of withholding allowances calculated correctly), many of them would have too little withheld--perhaps even subject to a penalty. This concern became especially acute once the original 1987 Form W-4 was received by the public so negatively. In fact, however, compliance in filing new forms was very high, and the number of refunds for 1987 returns actually increased.

Summary

The Tax Reform Act of 1986 made very substantial changes to the income tax withholding system. While many of these changes were incorporated into the tables that employers use to determine the proper amount to withhold from wages, some of the changes meant that employees needed to recalculate their withholding allowances and to submit new Forms W-4 to their employers. A less straightforward impact was the attention the Tax Reform Act drew to the tradeoff between accuracy and simplicity in the withholding system. We believe that the 1988 Form W-4 achieved the best balance yet between these competing objectives.

Notes and References

1. Strictly speaking, there are only two tax rates starting in 1988: 15 percent and 28 percent. However, the application of an additional 5 percent for certain taxpayers creates two additional brackets. This is because the purpose of the additional 5 percent is to phase out the effect of the 15 percent bracket and the taxpayer's exemptions. If the taxpayer's income is high enough for both of these to be fully phased out, his marginal tax rate returns to 28 percent. Such people face a marginal tax rate structure that begins at 15 percent, rises to 28 percent, rises again to 33 percent, and then returns to 28 percent.

Form W-4 Compliance: Evidence From Survey Data and Returns Processing

by
Ken Beier
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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Form W-4 compliance by employers plays a crucial role in maintaining an accurate withholding system. For this reason, regulations require that employers transmit to the Service Forms W-4 on which employees claim a high number of allowances or exemption from withholding. This study identifies a substantial gap between Forms W-4 of this type submitted to employers and those transmitted to the Service. However, when the Service has directed employers to change withholding, employer compliance exceeds 90 percent. Processing data indicate a decline in Form W-4 volumes since 1982 and a concentration of Form W-4 activity in the southwest portion of the country.

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Introduction

An accurate withholding system, that collects tax liabilities as income is received, contributes to the overall effectiveness of tax administration. Withholding rates on wage income are determined by the number of allowances on Form W-4 (Employee's Withholding Allowance Certificate). By considering the number of dependents and the amount of credits and deductions the taxpayer will claim on their return, withholding should approximately equal year-end tax liabilities. Employees claiming exemption from withholding are required to submit a new Form W-4 to their employer every year. Since 1980, employers have been required to transmit to the Service all "questionable" Forms W-4, i.e., Forms W-4 in which employees claim either exemption from withholding (when their weekly income exceeds $200) or a high number of allowances. A large proportion of "questionable" Forms W-4 validly reflect the taxpayer's circumstances. However, it is thought that a significant proportion of W-4 abuse falls into the above two categories. Thus, the Service requires "questionable" Forms W-4 to be submitted for its review.

This article presents an overview of Form W-4 processing. First, employer compliance with Form W-4 transmittal requirements is analyzed. This analysis is based on an employment tax examination of employers, which is part of the Strategic Initiative to Establish a Research Project on Withholding Noncompliance (SVC-1). Second, trends in Form W-4 processing are examined for fiscal years 1981 through 1985 and processing years 1986 through 1988. Data on Form W-4 processing by service center is also presented. The Tax Reform Act of 1986 required that a Form W-4 be submitted by all employees in 1987. The employer survey took place prior to this; however, it is still of interest because it is the first objective look at employer compliance with Form W-4 regulations.

Employer Survey

The employer portion of SVC-1 examined tax year 1984 employment tax returns and reporting practices for 3,331 employers during the period June 1986 through May 1987. This sample represents approximately 5.15 million employers and was selected from large and small employers within all industries. Employers were selected from those who had a Form 941/ Form 941E (Employer's Quarterly Federal Tax Return) filing requirement on the business master file (BMF) for tax year 1984. The results presented here are weighted to estimate values for all employers.

Operational areas of IRS (e.g., Examination, Collection, etc.) each have a unique perspective on Form W-4 compliance. Their resources are directed towards least compliant taxpayers; thus, operational enforcement results are not representative of the overall compliance levels. The SVC-1 employer survey is a random sample selected from all employers, regardless of their compliance characteristics, and measures the universe of compliance.

In tax year 1984, employers were required to transmit to the Service all Forms W-4 claiming more than 14 allowances and those claiming exempt status if wages were expected to exceed $200 per week. For these two categories, the employer examinations established the number of questionable Forms W-4 submitted to the employer, the number of those transmitted to the Service, the number of times the Service directed employers to change an employee's withholding status, and the number of times an employer complied fully with Service instructions. Information on the number of employees who left their jobs before employers could change their withholding status was also obtained. Table 1 presents these results for the entire population of employers.

For Forms W-4 with more than 14 allowances, the survey indicates that employers transmitted 49.6 percent of those submitted by employees. The Service issued a letter instructing employers to change the number of withholding allowances for 9.1 percent of the Forms W-4 originally transmitted by employers. Where employers were instructed to change an employee's withholding status, they did so 96.4 percent of the time where they could. (Some employees left prior to their employer's receipt of instructions to change withholding status.)

Employers transmitted to the Service an estimated 44.5 percent of Forms W-4 on which employees claimed exempt status. The Service instructed employers to change withholding for an estimated 18.2 percent of the exempt Forms W-4 transmitted by employers. However, over one-half of these employees left prior to receipt of the Service instructions. Where employees were still present, their employers complied fully with IRS instructions to start withholding 93.4 percent of the time. As with Forms W-4 where more than 14 allowances are claimed, employer compliance with instructions to change withholding status is quite high.

Table 1. Form W-4 Submittal and Subsequent Compliance by Employers with IRS Instructions to Change Withholding Status

	Greater Than 14 Allowances				Exemption From Withholding			
	Number	Percent of (1)	Percent of (2)	Percent of (5)	Number	Percent of (1)	Percent of (2)	Percent of (5)
(1) Submitted To Employer	224,490	100.0	NA	NA	622,338	100.0	NA	NA
(2) Transmitted To Service	111,373	49.6	100.0	NA	277,073	44.5	100.0	NA
(3) IRS Letter Issued	10,086	NA	9.0	NA	50,540	NA	18.2	NA
(4) Employee Leaves*	1,044	NA	0.9	NA	28,575	NA	10.3	NA
(5) Potential Compliance (3)-(4)	9,042	NA	8.1	100.0	21,965	NA	7.9	100.0
(6) Full Compliance**	8,714	NA	NA	96.4	20,513	NA	NA	93.4

Note: Percentages reported are relative to the number of employers or Forms W-4 in (1).
* Indicates that the employee left prior to the employer's receipt of IRS instructions to change withholding status.
**Indicates that the employer complies fully with Service instructions to change withholding status.

Employer Compliance by Industry and Employment Size Class

Table 2 presents transmittal rates for Forms W-4 by industry and employment size class. Two transmittal rates are reported: 1) the percentage of employers sending Forms W-4, and 2) the percentage of questionable Forms W-4 transmitted to the Service. The employer percentages reported in Table 2 are relative to the number of employers receiving questionable Forms W-4. For Forms W-4 with over 14 allowances, 38 percent of employers transmitted an estimated 50 percent of questionable Forms W-4 to the IRS. Transmittal rates for Forms W-4 with more than 14 allowances were above average for firms in heavy construction (72 percent), manufacturing (75 percent), air transport (76 percent), and finance, insurance, and real estate (80 percent). Wholesale and retail firms transmitted only five percent of Forms W-4 claiming over 14 allowances. When examined by size, small firms submitted a lower than average proportion (26 percent), and large firms submitted a higher than average proportion (60 percent) of Forms W-4 claiming over 14 allowances.

Table 2. Employer Compliance Levels for Transmittal of Forms W-4 to the Service

Category	Greater than 14 Allowances		Exemption from Withholding	
	Employers Sending Forms W-4	Forms W-4 Transmitted	Employers Sending Forms W-4	Forms W-4 Transmitted
All Employers	38%	50%	27%	45%
Industry				
Agriculture	51	36	30	31
Mining, Oil, Gas	59	56	44	36
Mining, Other	21	34	59	64
Construction, Heavy	58	72	58	69
Construction, Other	48	59	29	12
Manufacturing	54	75	37	41
Transport, Air	55	76	51	63
Transport, Other	46	55	39	58
Wholesale, Retail	5	5	14	7
Finance, Insurance & Real Estate	62	80	52	90
Services	52	46	6	60
Government	39	30	39	22
Not Otherwise Classified	11	19	21	24
Employment Size				
Small (0 - 99)	26	38	28	17
Large (100 & over)	60	61	52	56
Unknown	90	97	14	68

Note: Percentages are relative to the number of employers receiving questionable Forms W-4 from their employees and the number of questionable Forms W-4 submitted by employers.

For Forms W-4 claiming exempt status, 27 percent of employers transmitted 45 percent of these Forms W-4. Compliance with transmittal requirements for exempt Forms W-4 was higher than average for firms in mining, other (64 percent), heavy construction (69 percent), air transport (63 percent), and finance, insurance, and real estate (90 percent). These compliance rates were substantially lower than average for organizations in construction, other (12 percent), wholesale and retail trade (seven percent), and government (22 percent). Compliance with transmittal requirements for exempt Forms W-4 was lower than average (17 percent) for small firms and higher than average (56 percent) for large organizations.

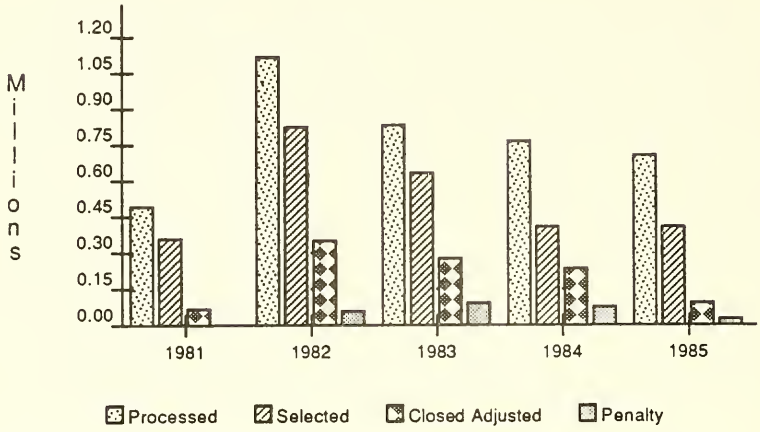
These data indicate a substantial gap between the number of questionable Forms W-4 that meet transmittal criteria and those that are actually sent to the Service. For every Form W-4 transmitted to the Service in 1984, there was another questionable Form W-4 that was received by employers, but not transmitted. The survey also indicates that a substantial number of employees, particularly those claiming exempt status, leave their jobs before their employers receive Service instructions to change their withholding status. This is at least partially due to the transient nature of employees claiming exempt status.

IRS requires that employees claiming exemption from withholding file a Form W-4 with their employer annually. The survey indicates that 453,469 employees claimed exempt status in 1984 without filing the required Form W-4. Thirty-six percent of these cases were in wholesale and retail firms with less than 100 employees. This failure to file represents another segment of Form W-4 noncompliance in addition to the gap between Form W-4 filings and their transmittal to the Service described above.

W-4 Processing Patterns

Data from SVC-1 also provide an overview of Forms W-4 dated 1981 through 1985. Questionable Forms W-4 are sent by employers to service centers where they are transcribed. Tapes containing the Form W-4 data are then sent to the Martinsburg Computing Center where Forms W-4 are selected for examination by service centers. The selection criteria change at least annually and include such factors as filing history and balance due on the individual's tax return in prior years. Based on its examination, the service center may instruct the employer to change the individual's withholding status. For Forms W-4 dated 1981 through 1985, 4,053,456 questionable Forms W-4 were submitted to IRS service centers by 204,478 employers. This represents Forms W-4 for 3,587,856 employees. Figure 1 presents data on all questionable Forms W-4 by the fiscal year (FY) in which they were processed. In Figure 1 "processed" means that a Form W-4 has been transcribed by the service center and processed by the Martinsburg Computing Center. "Selected" indicates that, based on its selection criteria, the Service has created a case. "Closed Adjusted" means that, based on its examination, the Service directs an employer to change an employee's withholding status. "Penalty" indicates that a $500 penalty, under IRC Section 6682, has been recommended against the employee.

Figure 1. Questionable Form W-4 Processing in Fiscal Years 1981 through 1985



Year-to-year changes in the number of Forms W-4 processed can be expected to occur for a variety of reasons:

- o A change in Service requirements for submittal of Forms W-4
- o A change in the extent of abuse of withholding by employees
- o A change in the level of compliance by employers with submittal requirements

The number of cases selected will be affected by the Service's selection criteria. The data in Figure 1 indicate a decline in questionable Forms W-4 processed from a peak of 1.1 million in FY 1982 to 0.7 million in FY 1985.

These data also show a substantial decline in closed adjusted cases and penalties for 1984 to 1985. Closed adjusted cases declined 64 percent, from 227,388 in FY 1984 to 81,541 in FY 1985. Penalties declined 81 percent, from 67,478 in FY 1984 to 13,041 in FY 1985. Table 3 reports the pattern of Forms W-4 processed by service center. These data indicate that the Fresno, Ogden, and Austin Service Centers account for over one-half of all Forms W-4 processed. Thus, employers in the west and southwest account for a disproportionately large volume of W-4 activity.

Table 3. Form W-4 Processing By Service Center (FY 1981 to FY 1985)

Service Center	Total
Atlanta	208,660
Andover	323,760
Kansas City	284,986
Cincinnati	229,367
Austin	461,335
Brookhaven	261,348
Philadelphia	195,773
Ogden	699,532
Memphis	167,924
Fresno	1,220,771
Total	4,053,456

One indicator of abuse of the withholding system is the submittal of multiple questionable Forms W-4 by a taxpayer during the year. Taxpayers can manipulate their withholding by claiming an excessive number of allowances. They can also avoid withholding by claiming exemption from withholding and changing jobs before the Service has an opportunity to instruct their employer to adjust their withholding status. Table 4 reports the percentage of employees who have filed more than one questionable Form W-4 per employer for each calendar year. These data indicate a decline in multiple submittals from 11.8 percent of all employees in 1981 to seven percent in 1985. The change is especially notable among those with multiple employers, where multiple submittals declined from 1.2 percent of all employees in 1981 to 0.2 percent of all employees in 1985. This population is thought of as a key group in W-4 noncompliance. It appears that, during this period, employee manipulation of the withholding system (by filing multiple Forms W-4) has declined. It is possible that the decline in multiple submittals also reflects an increase in the sophistication of withholding abuse. Employees who become aware of the criteria for employer transmittal of Form W-4 to the Service may reduce their number of allowances to below the transmittal threshold (over 14 allowances in 1984). Although abuse may still be occurring, a reduction in the number of allowances still increases the amount of withholding and improves withholding compliance.

Table 4. Employees Filing More Than One Questionable Form W-4 Per Employer By Calendar Year

	Percent of Employees with Multiple Submittals		
Calendar Year	With One Employer	With Two or More Employers	Total
1981	10.6	1.2	11.8
1982	9.3	.8	10.1
1983	8.5	.5	9.0
1984	9.2	.4	9.6
1985	6.8	.2	7.0

The Form W-4 filing data presented in Figure 1 indicate a decline in overall processing volumes from FY 1982 through FY 1985. Table 5 presents submittal and selection volumes for processing years 1986 through 1988. In 1987, all employees were required to file a new Form W-4 with their employer. It appears that this requirement has not substantially altered the decline in transmittal of questionable Forms W-4 by employers. The decline in Form W-4 transmittal volume that occurred from 1982 to 1985 appears to have continued since that time.

Table 5. Form W-4 Volumes

	Processing Year		
Form W-4 Activity	1986	1987	1988
Submittals	854,741	580,068	425,600
Selected	420,662	208,566	144,922

Note: "Submittals" indicates that a service center recorded receipt of the Form W-4.
Source: W-4 Project Office

Conclusion

The number of questionable Forms W-4 processed has declined substantially since FY 1982, reflecting a decline in transmittals by employers. The decline in submittal of multiple Forms W-4 by employees also suggests a decline in abuse of withholding during the 1981 to 1985

period. Thus, over this period, the W-4 program appears to have improved compliance with W-4 regulations. The SVC-1 employer survey indicates that, for tax year 1984, slightly less than half of the Forms W-4 claiming more than 14 allowances or exempt status were submitted to the Service. This indicates a substantial Form W-4 gap in 1984. However, when the Service directed an employer to change an employee's withholding status, compliance with these instructions exceeded 90 percent.

Monitoring Tax Reform: A Comparison of 1987 and 1986 Returns*

by
Ken Beier
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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Most individual taxpayers expected a tax increase as a result of the Tax Reform Act of 1986. This was contrary to the expectations of tax experts; however, these attitudes persisted through the 1987 filing season. This article examines several possible explanations of the public perception of the Tax Reform Act. First, data from 1986 and 1987 returns are analyzed to determine whether tax liabilities did, in fact, decrease for most taxpayers. Second, changes in refund and balance due status between 1986 and 1987 are examined to establish whether this could explain public attitudes. The article also suggests a third possibility: that the public attitudes reflect a general skepticism that the Tax Reform Act would benefit most taxpayers.

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Introduction

The Tax Reform Act of 1986 (TRA) eliminated a large number of credits and deductions and shifted a substantial proportion of the statutory tax burden from individuals to corporations.[1] Although the Act was designed to be revenue neutral, it was expected that eight out of ten individual taxpayers would benefit from the provisions of the TRA.[2] The public perception of the Tax Reform Act was substantially at odds with the pronouncements of tax experts. A New York Times/CBS News poll taken in June 1986 revealed that only 11 percent of American taxpayers expected to pay lower taxes as a result of the Tax Reform Act.[2] Thirty-six percent of those polled expected to pay higher taxes and 33 percent expected to pay about the same amount of tax. Even among those taxpayers who had considerable knowledge of the legislation, 50 percent believed that their taxes would increase.

This apparent divergence of public attitudes from expert opinions was explained by observers as 'voter cynicism' and a belief that large scale changes in Washington rarely work to the benefit of the average taxpayer.[3] After the 1987 filing season, these perceptions apparently remained intact. The Conference Board, a management information organization, conducted a survey of attitudes toward the Tax Reform Act in June 1988. The survey reveals that, after adjusting for changes in income, 46 percent of taxpayers thought that their tax bill had increased

*The author wishes to thank Jim Dumais (Research Division) for his initial analysis of tax liabilities.

in tax year 1987.[4] Thirty-six percent thought their taxes were about the same, and 18 percent perceived their taxes to be lower.

Concern about these perceptions of the Tax Reform Act prompted the Research Division to study how individual tax liabilities and refund/balance due status actually did change from 1986 to 1987. The possible payment statuses for taxpayers are refund, even, full paid and balance due. The study examined a sample of individual taxpayers who filed in both tax year 1986 and tax year 1987. Of the 103.7 million tax year (TY) 1987 individual returns which posted to the individual master file (IMF) by the end of December 1988, 90 percent (92.9 million) had previously filed a TY 1986 return. The sample of taxpayers was selected according to their payment status in each year. For example, one of the groups in the sample includes those taxpayers who had a balance due in TY 1986 and a refund in TY 1987.

Individual Income Tax Liabilities in 1986 and 1987

Data from the sample was used to estimate the average effective tax rate by income class in TY 1986 and TY 1987. The effective tax rate is the income tax liability divided by total income reported on individual income tax returns. This is a better measure of tax liability than tax dollars paid, since an increase in taxes paid could reflect either a change in income or a change in tax liabilities on the same amount of income. The number of returns and effective tax rate by income class are reported in Table 1.

The data indicate a shift in returns from the under $10,000 income class, which declined in number, to higher income classes, all of which increased in number from 1986 to 1987. The effective tax rate declined for all income classes. The average decline for all taxpayers is 0.8 percent. The decline is lowest (0.2 percent) for those taxpayers in the lowest income class -- those with under $10,000 in total income. The decline is greatest for the highest income class (total income of $100,000 or more) which experienced a 4.6 percent decline in effective tax rate. These data are consistent with the expectations of tax experts -- that most individuals would benefit from tax reform. It appears from these data that low-income taxpayers did not benefit from the Tax Reform Act as much as the average taxpayer. However, these data do not reflect an estimated 1.2 million low-income taxpayers who ceased filing in TY 1987. Most of this decline in the number of low-income returns can be attributed to the TRA. The sample also does not include 3.8 million dependents who filed for the first time in 1987. This change was also due primarily to the TRA.

Table 1. Comparison of the Number of Returns and Average Effective Tax Rate for Individuals Who Have Filed Returns for 1986 and 1987

Income Class	Number of Returns (thousands)			Average Effective Tax Rate (percent)		
	1986	1987	Change (86-87)	1986	1987	Change (86-87)
Under $10,000	25,115	22,178	(2,937)	6.3	6.1	(0.2)
$10,000 to $14,999	11,132	11,588	456	7.2	6.5	(0.7)
$15,000 to $19,999	9,515	9,723	208	9.0	8.1	(0.9)
$20,000 to $29,999	14,739	15,087	348	10.8	9.8	(1.0)
$30,000 to $49,999	17,572	18,229	657	12.6	11.5	(1.1)
$50,000 to $99,999	8,827	9,736	909	16.3	15.7	(0.6)
$100,000 or more	1,631	1,990	359	30.2	25.6	(4.6)
Total	88,532	88,532	0*	15.1	14.3	(0.8)

*Note: The total number of returns does not show any change between 1986 and 1987 because the sample on which these tabulations are based includes only taxpayers who filed returns in both 1986 and 1987.[5]

Comparisons of Refund and Balanced Due Status

The previous section established that individual tax liabilities generally decreased in TY 1987 relative to TY 1986. Despite this decrease, it is possible that a change in year-end refund or balance due amounts adversely affected taxpayers and their perceptions of the Tax Reform Act. This could have occurred with a shift of taxpayers from a refund to a balance due status, with an increase in balance due amounts, or with a decrease in refund amounts.

Figure 1 provides an analysis of changes in payment status between TY 1986 and TY 1987 for taxpayers who filed both of these returns. (A more detailed breakdown of refund and balance due status is presented in Appendix A.) As indicated in Figure 1, most taxpayers (77.8 percent) maintained the same status in 1987 as they had in 1986: either balance due (10.7 percent) or refund (67.1 percent). For those who changed, the shift to a balance due status (11.5 percent) was slightly larger than the number of taxpayers who shifted to a refund status (10.7 percent).

Figure 1. Change in Refund and Balance Due Status From TY 1986 to TY 1987 [6]

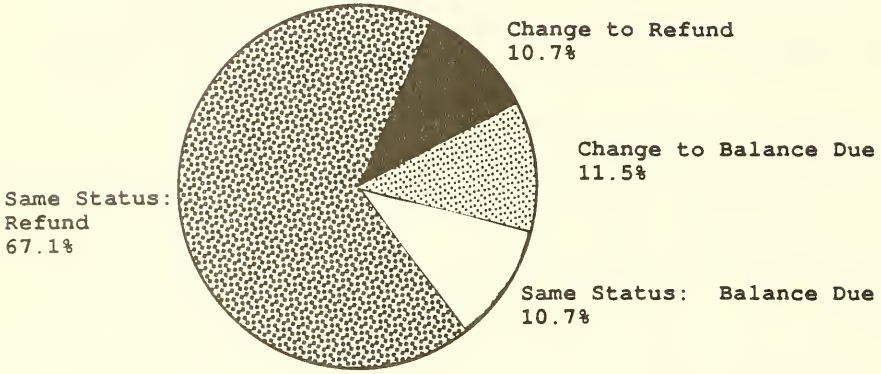

Figure 2 presents an analysis of refund increases and decreases for those taxpayers who received a refund in both TY 1986 and TY 1987. Most of these taxpayers received a larger refund in TY 1987 than they had in TY 1986 (57.0 percent); 40.4 percent received a smaller refund. The remaining 2.6 percent had no change in the amount of their refund. Table 2 compares the size of these refund increases to the size of refund decreases. As Table 2 indicates, the distribution of changes in refund amounts across three size classes is quite similar for increases and decreases. Most taxpayers who received a refund in both years appear to be better off; thus, negative attitudes toward tax reform cannot be attributed to an overall decline in refund amounts.

Figure 2. Taxpayers Receiving a Refund in TY 1986 and TY 1987

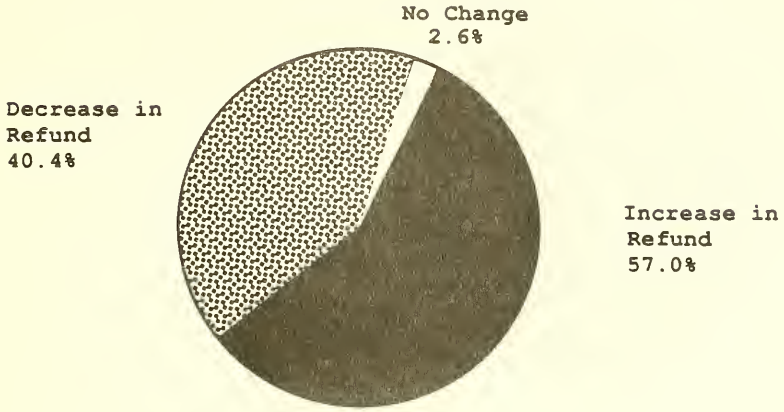

Table 2. Change in Refund Amounts from TY 1986 to TY 1987

Change in Dollar Amount of Refund	Refund Increase	Refund Decrease
Under $100	19.8%	23.0%
$100 - $500	51.1	41.2
Over $500	29.1	35.8
Total	100.0	100.0

Figure 3 presents a similar analysis as Figure 2 for those taxpayers with a balance due in both TY 1986 and TY 1987. Most (53.2 percent) had a decrease in the balance due amount; 46.6 percent had an increase in the balance due amount. Only 0.2 percent had no change in the balance due amount from TY 1986 to TY 1987. The size of the changes in balance due amounts, as shown in Table 3, is similar for decreases and increases. Thus, increased balance due amounts can be rejected as a primary source of negative perceptions of tax reform.

Figure 3. Taxpayers With a Balance Due in TY 1986 and TY 1987

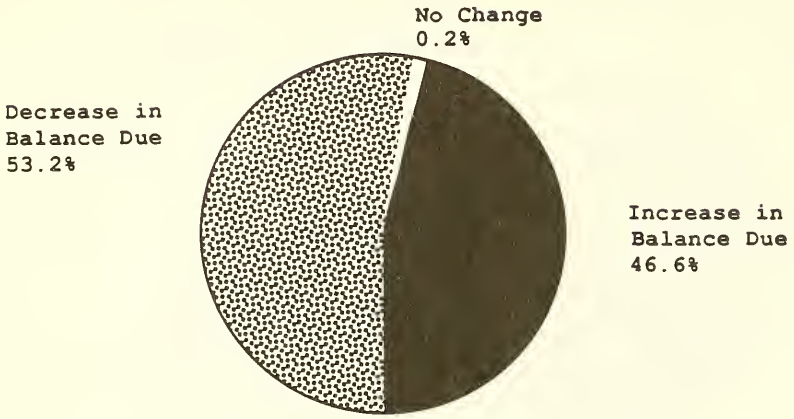

Table 3. Change in Balance Due Amounts from TY 1986 to TY 1987

Change in Dollar Amount of Refund	Balance Due Increase	Balance Due Decrease
Under $100	17.9%	15.9%
$100 - $500	34.1	30.7
Over $500	48.0	53.4
Total	100.0	100.0

Conclusion

Most taxpayers expected the Tax Reform Act of 1986 to increase their tax liabilities. Tax return data indicate that, contrary to public attitudes, effective tax rates have gone down for all income classes. It is possible that tax liabilities could decline, but that changes in balance due or refund amounts could be perceived as an increase in tax liability. The data presented here fail to support this proposition. Slightly more taxpayers shifted to a balance due status in TY 1987 (11.5 percent) than those who shifted to a refund status in TY 1987 (10.7 percent). However, most taxpayers retained the same end of year status in TY 1987 (refund or balance due) and most of these taxpayers had a larger refund or a smaller balance due in TY 1987 compared to TY 1986.

From 1986 through 1988, opinion surveys indicated that most taxpayers, including those with considerable knowledge of the Tax Reform Act of 1986, expected their taxes to increase under this legislation. The evidence presented here on changes in tax liabilities and year-end refund or balance due status does not explain these attitudes. Thus, we must look elsewhere for an explanation of public attitudes toward tax reform. The expectation of increased taxes may reflect an underlying skepticism of tax reform in general rather than concrete knowledge of the effects of the Tax Reform Act of 1986.

Appendix A

Payment Status of Individuals Who Filed Both 1986 and 1987 Returns (in thousands)

TY 1986 Return Payment Status	TY 1987 Return Payment Status				Total 1986 Returns	1986 Percent of Total
	Refund	Even	Full Paid	Balance Due		
Refund Return	59,793	661	1,430	8,624	70,508	75.9%
Even Return	576	1,356	79	604	2,614	2.8%
Full Paid Return	1,425	67	809	681	2,982	3.2%
Balance Due Return	7,844	582	720	7,683	16,830	18.1%
Total 1987 Returns	69,637	2,666	3,038	17,592	92,934	100.0%
1987 Percent of Total	74.9%	2.9%	3.3%	18.9%	100.0%	

Notes and References

1. This decline in tax liability is that reflected in individual tax returns. Although the statutory tax burden has been shifted to corporations, the final burden does not necessarilly fall on those who directly pay the tax. For example, consumers may pay for increased corporate income taxes in the form of higher prices. The perspective used here considers taxes paid on individual tax returns; however, it does not consider secondary effects of other taxes, such as corporate income taxes, on individuals.

2. Clymer, Adam, "Doubt Found on Fairness and Cuts," **New York Times**, June 25, 1986.

3. Dionne, E.J., "Nation Greets Tax Bill Coldly," **New York Times**, August 20, 1986, p. 20.

4. Conference Board, Release 3640, June 17, 1988.

5. The number of returns in Table 1 (88.5 million) is less than the total number of returns filed in both TY 1986 and TY 1987 (92.9 million). This is because the sample includes only those taxpayers who maintained the same filing status and spouse in TY 1987 relative to TY 1986. These tabulations also exclude noncalendar year taxpayers, and taxpayers who filed a TY 1986 or TY 1987 return under an invalid SSN or with a different SSN in TY 1987 than in TY 1986.

6. A refund return is defined as a return with prepayments equal to or exceeding tax liability. Thus, this category includes "even" returns (tax liability minus prepayments equals zero). A balance due return is defined as a return with prepayments less than tax liability. This includes returns full paid at the time of filing, as well as those with partial or zero payments.

Trends in Returns with Itemized Versus Non-Itemized Deductions

by
C.G. Franklin
Research Division
Office of the Assistant Commissioner
(Planning, Finance, and Research)

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Individual income tax returns filed with itemized deductions are typically more complex than non-itemized returns, more burdensome for taxpayers to prepare, more costly to process, and involve more potential compliance issues. Legislation frequently changes the factors that determine whether taxpayers file itemized versus non-itemized returns. This article will present trends in these filings, discuss the impact of major legislation, and present a look at what the near-term future is expected to be as the impacts of the Tax Reform Act of 1986 unfold.

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Introduction

Between 1977 and 1987, the number of individual income tax returns filed with itemized deductions grew dramatically. In 1977, 26.0 million itemized returns were filed; by 1987, that number had grown to 40.8 million returns, an increase of nearly 57 percent over this eleven year interval (see Table 1). During this same time interval, three major law changes have affected the number of itemized returns filed: the Tax Reduction and Simplification Act of 1977, the Economic Recovery Tax Act of 1981, and the Tax Reform Act of 1986 (TRA).[1,2,3] The impact of each of these laws on itemized returns is discussed in more detail in the following sections.

The Tax Reduction and Simplification Act of 1977 established the "zero bracket amount," which is a single deduction amount based on marital status. This replaced the former two-part standard deduction (i.e., the minimum low-income allowance and the percentage standard deduction), starting with returns filed in 1978. This zero bracket amount increased the amount of the standard deduction applicable to all taxpayers, including those who itemized their deductions. As a result of this Act, several million fewer taxpayers filed individual income tax returns with itemized deductions. The number of itemized returns dropped from 26.0 million in 1977 to 22.9 million in 1978, a reduction of nearly 12 percent. After 1978, itemized returns grew at an average annual rate of 6.9 percent through 1987 (see Table 1).

Table 1. Number of Itemized Returns Filed, 1977 to 1987

Calendar Year	Number of Individual Returns with Itemized Deductions	Year-to-Year Percent Change
1977	25,951,000	
1978	22,896,000	-11.7%
1979	25,756,000	+12.5
1980	26,483,000	2.8
1981	28,950,000	9.3
1982	31,571,000	9.1
1983	33,432,000	5.9
1984	35,230,000	5.4
1985	38,203,000	8.4
1986	39,484,000	3.4
1987	40,839,000	3.4

The Economic Recovery Tax Act of 1981 required that both the personal exemption and the zero bracket amounts be indexed, based on the consumer price index for the preceding year. The Act mandated that indexing start with returns filed in 1986. This law change was expected to slow the growth in itemized returns, since only "real" growth in taxpayers' deductible expenses would cause their itemized total to exceed the standard deduction (and, therefore allow them to switch to an itemized return).

As anticipated, the number of itemized returns filed in 1986 increased, but by only 3.4 percent--compared to an average annual increase of 7.6 percent between 1979 and 1985. Itemized returns also increased by only 3.4 percent in 1987, again reflecting the slower rate of growth due to the indexing of the personal exemption and zero bracket amounts.

The Impact of the Tax Reform Act of 1986

The Tax Reform Act of 1986 (which impacts returns filed in 1988 and beyond) should conceptually have the same effect that the Tax Reduction and Simplification Act of 1977 had on itemized returns--that is, TRA should reduce the number of individual returns filed with itemized deductions. The number of itemized returns filed should decline because under TRA the personal exemption was increased from $1,080, for returns filed in 1987, to $1,900 and $1,950, for returns filed in 1988 and 1989, respectively. The standard deduction amounts were increased as shown in Table 2. (In addition, taxpayers who were age 65 or over, or blind, or both, receive a larger standard deduction than the rest of the filing population). TRA also eliminated the deductibility of state sales tax; limited the deductibility of personal interest paid to 65, 40, 20, 10, and 0 percent in 1987, 1988, 1989, 1990, and 1991, respectively; limited the deductibility of home mortgage interest; and limited medical and miscellaneous deductions to

7.5 percent and 2 percent of adjusted gross income (AGI), respectively. [4] By raising the personal exemption and standard deduction amounts, while eliminating or limiting the deductibility of certain expenses, TRA will enable millions of taxpayers who have previously itemized deductions, to take the standard deduction instead (i.e., the standard deduction amounts will either equal or exceed the taxpayers' total itemized deductions).

Table 2. Standard Deduction Amounts in 1987, 1988, and 1989

Filing Status	Standard Deduction Amounts for Individual Returns Filed In		
	1987	1988	1989
Married Filing Jointly, or a Qualifying Widow or Widower	$3,670	$3,760	$5,000
Single	2,480	2,540	3,000
Head of Household	2,480	2,540	4,400
Married Filing Separately	1,835	1,880	2,500

In 1988, approximately 35.5 million taxpayers filed individual returns with itemized deductions, a 13 percent decline from the 40.8 million taxpayers who itemized in 1987 (see Table 3). The number of persons filing itemized returns is expected to continue to decline through 1990. These declines result from eliminating or limiting the deductibility of certain expenses and increases in the personal exemption and standard deduction amounts (as mandated by TRA), together with the indexing of the personal exemption and standard deduction amounts.

Table 3. Number of Itemized Returns Filed, 1986 to 1990

Calendar Years	Number of Individual Returns with Itemized Deductions	Year-to-Year Percent Change
Actual:		
1986	39,484,000	+3.4%
1987	40,839,000	+3.4
1988	35,512,000	-13.0
Projected:		
1989	31,440,000	-11.5
1990	29,358,000	-6.6

Non-Itemized Individual Returns

Since the number of itemized returns are expected to decline (for reasons previously mentioned), a corresponding increase is expected in non-itemized returns. Table 4 shows the historical and projected trends in the number and proportion of itemized and non-itemized returns filed.

Table 4. Number and Proportion of Itemized Returns and Non-Itemized Returns

Calendar Year	Itemized Returns		Non-Itemized Returns	
	Number	Proportion	Number	Proportion
Actual:				
1977	25,951,000	30.3%	59,802,000	69.7%
1978	22,896,000	26.2	64,574,000	73.8
1979	25,756,000	28.4	64,971,000	71.6
1980	26,483,000	28.5	66,569,000	71.5
1981	28,950,000	30.8	65,063,000	69.2
1982	31,571,000	33.1	63,848,000	66.9
1983	33,432,000	35.0	62,109,000	65.0
1984	35,230,000	36.5	61,294,000	63.5
1985	38,203,000	38.4	61,326,000	61.6
1986	39,484,000	38.8	62,270,000	61.2
1987	40,839,000	39.6	62,412,000	60.4
1988	35,512,000	33.2	71,517,000	66.8
Projected:				
1989	31,440,000	28.7	77,984,000	71.3
1990	29,358,000	26.1	83,241,000	73.9

The trend in the proportion of total individual returns filed without itemized deductions (i.e. non-itemized returns) is the converse of the trend in itemized deductions. The percentage of non-itemized returns filed declined continually from 1978 through 1987. In 1988, however, the proportion of non-itemized returns increased dramatically, from 60.4 percent in 1987 to 66.8 percent in 1988. As the effects of the Tax Reform Act of 1986 continue to work themselves out, non-itemized returns are expected to increase to 71.3 percent in 1989, then increase to 73.9 percent in 1990, equaling the proportion of non-itemized returns in 1978.

Taxpayer Burden Reduction

Both taxpayers and the Internal Revenue Service will benefit from the reduction in the number of individual returns filed with itemized deductions. Estimates indicate that TRA will result in 4.5 million, 9.4 million and 12.2 million fewer itemized returns filed in 1988, 1989 and 1990, respectively (see Table 5). This will translate into a substantial dollar savings for the Service, since itemized returns are

more expensive to process. However, millions of taxpayers will also benefit from these changes since they will be relieved of the burden of filing these more complicated returns.

Table 5. Number of Itemized Returns Filed, 1986 to 1990, Before and After Tax Reform[5]

Calendar Years	Number of Individual Returns with Itemized Deductions: Before TRA	After TRA	Difference
Actual:			
1986	39,484,000	---	---
1987	40,839,000	---	---
1988	40,036,000	35,512,000	4,524,000
Projected:			
1989	40,831,000	31,440,000	9,391,000
1990	41,583,000	29,358,000	12,225,000

Estimates for 1989 indicate that, on average, it will take taxpayers approximately 4.5 hours to itemize their deductions (i.e., complete a Schedule A).[6] And, since it is estimated that 9.4 million fewer taxpayers will file a Form 1040 with a Schedule A attached, in aggregate, taxpayers will spend 42 million fewer hours preparing these tax returns in 1989. Also, many taxpayers file Form 1040 only because of the requirement that all itemizers file the "long form." Some of these taxpayers will now be able to file the simpler Forms 1040A and 1040EZ--since they will no longer be itemizing deductions--thereby reducing their tax return preparation time even further.

Notes and References

1. **Individual Income Tax Returns**, 1977 Statistics of Income, Publication 79, Internal Revenue Service, p.49.

2. **Individual Income Tax Returns 1985**, Statistics of Income, Publication 1304, Internal Revenue Service, p.3.

3. **SOI Bulletin**, Summer 1988, Volume 8, Number 1, Internal Revenue Service, p. 7.

4. For a more complete discussion on the standard deduction and itemized deductions, see **Your Federal Income Taxes** (for use in preparing 1988 Returns), Publication 17, Internal Revenue Service, pp. 120-153.

5. The figure for the number of individual returns with itemized deductions before tax reform for 1988 is an estimate.

6. The Internal Revenue Service estimates that for 1989, it will take the average taxpayer 4 hours and 34 minutes to complete a Schedule A. Completion time includes recordkeeping, learning about the law or the form, preparing the form, and copying, assembling, and sending the form to the IRS.

Estimates of Restaurant Tipping: 1983-1986

by
Thomas A. Thompson
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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In an effort to develop reliable estimates of restaurant tipping behavior, IRS contracted to obtain tipping data from a nationwide consumer diary panel. Participants in this panel recorded their food and beverage expenditures and tips on dining-out occasions. Estimates developed from these data show that average tipping rates at types of restaurants where tipping is customary were quite close to the 15 percent figure usually cited for restaurant tipping. Average tipping percentages, which depend on the incidence of tipping as well as on the tipping rate, were 13 percent or more. Although tipping percentages varied across restaurant categories, even the lowest estimates were well in excess of the eight percent tip reporting threshold specified in the Tax Equity and Fiscal Responsibility Act of 1982.

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Background

Because tip income is not covered by Form W-2 reporting and withholding the same way that wage income is, underreporting of tip income has long been a concern of IRS. Employers of tip recipients are required to report (and withhold taxes from) tips, as well as wages, on Forms W-2. Prior to the Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982, however, employers had to include on each W-2 only the amount of tip income that was reported to them by the tipped employee. Tip recipients who were underreporting tip income on their tax returns thus had an incentive to understate their tip income to their employers as well. To limit this practice, TEFRA required any food and beverage establishment employing 10 or more tipped employees to allocate additional tip income to its tipped employees if total tip income reported by these employees did not equal at least eight percent of the establishment's gross receipts. The amount to be allocated was equal to the difference between reported tips and eight percent of gross receipts. Affected employers were required to report these allocated amounts on their tipped employees' Forms W-2, but the allocated tips were not subject to withholding.

Although TEFRA provided that employers could petition for lower allocation thresholds, it assumed, in effect, a minimum average tipping percentage of eight percent. This figure, however, is only about half of the 15 percent figure usually cited as a normative restaurant tipping rate. In an effort to develop reliable estimates of actual tipping practices, IRS contracted with the Survey Research Laboratory (SRL) of the University of Illinois to study tipping behavior using a consumer diary panel. IRS hoped to obtain from this research not only estimates of overall tipping averages, but also some guidelines for judging the adequacy of tip income reporting by employees of different types of restaurants in different locations.

Data Source

The data used in developing the estimates in this report were obtained from diaries maintained by households in a national consumer panel operated by NPD Research, Inc. The NPD panel included nearly 13,000 households, both families and individuals. NPD asked the participating households to record their food and beverage expenditures and related tip amounts for all dining occasions involving restaurants or other eating places.[1] Households recorded these data daily on NPD diary forms during specified two-week periods.[2] The aggregated results from these diary forms were weighted up to population totals according to Census Bureau estimates involving a number of socio-demographic variables. SRL then tabulated the results according to categories based on the characteristics of the eating places and the household members involved in particular dining occasions.[3]

The diary approach used in this study was adopted on the grounds that tipping information obtained from people leaving tips is likely to be more accurate than data obtained from tip recipients, as the latter have economic incentives to underreport their income. Although tippers might tend to overstate tipping levels for reasons of prestige, this would be more likely in an interview situation than in a diary-keeping operation. Also, biases of this kind most commonly occur in the early stages of participation in such a program. (Partly for this reason, NPD does not use data collected in a household's first quarter of participation.) Day-to-day recording of information in diaries is also considered to be more accurate than using retrospective interview surveys for obtaining data on small, infrequent expenditures.

Data Concepts

Tables 1 through 4 present estimates of tipping behavior for the years 1983 through 1986.[4] The tipping figures in these tables are for dining occasions involving food ordered and eaten inside at restaurants where tipping is customary. The identification of these "tip-type" restaurants was done in two stages. Six different categories of eating places were included in the NPD diary data--family-type restaurants, coffee shops, atmosphere/specialty restaurants, cafeterias, fast food/drive-in places, and take-out places. As an initial approximation, the first three of these types were designated as tip-type restaurants. In these three categories, tips were left on about 70 percent of dining occasions on which the food was ordered and eaten inside the establishment. However, even though some "stiffing" (non-tipping) would be expected almost everywhere, the fact that an average of 30 percent of these occasions were not tipped cast some doubt on the adequacy of the criterion used. As a result, a second approximation was attempted, identifying types of restaurants (mainly classified by the major type of food served) within these three categories in which tips were left on at least 60 (and generally over 80) percent of the occasions, on the average. These restaurants are the "tip-type" restaurants for which estimates are shown in Tables 1 through 4.[5]

The relationship between tips and food and beverage expenditures can be expressed in either of two ways. First is the commonly cited "tipping rate," the ratio of tips to expenditures on occasions when tips are left. Second is the "tipping percentage," or the ratio of tips to

expenditures for all dining occasions, whether tipped or not. Tipping percentages reflect the effect of both the tipping rate and the incidence of tipping (the fraction of occasions on which tips are left). For tipping percentages to be high, both the tipping rate and the incidence of tipping must be high; low tipping percentages result from low tipping rates or low incidences of tipping (or both). The tipping percentage is of more interest to IRS, because tipping percentage estimate can provide guidelines for judging tip income reporting by tip recipients in different kinds of restaurants, even in cases where it may not be possible to distinguish between tipping and nontipping occasions from a restaurant's books and records.

Time-Series Data

Tables 1 and 2 present estimates for tip-type restaurants for the years 1983 through 1986.[6] The figures in these tables are for all categories of tip-type restaurants combined.

Restaurant Expenditures and Tips

Lines 1 and 2 of Table 1 show that although the total number of dining-out occasions increased over the 1983-1986 period, the number of these occasions taking place in tip-type restaurants decreased. Therefore, as shown in line 3, the fraction of dining occasions taking place in tip-type restaurants steadily declined from 29 percent in 1983 to slightly less than 26 percent in 1986. These figures illustrate a continuing shift of patronage from regular restaurants to fast food establishments, carry-outs, and other types of eating places where gratuities are rare.[7] Despite this drop in patronage at tip-type restaurants, however, total food and beverage expenditures at these restaurants remained relatively constant over this period, as shown in line 4. This is because the average expenditure per tip-type restaurant occasion increased by 10 percent between 1983 and 1986, an increase approximately equal to the rate of inflation over this period.

The number of occasions on which tips were left at tip-type restaurants dropped somewhat between 1983 and 1986, as shown in line 5. This was due entirely to the decline in patronage experienced by these restaurants. Line 6 shows that the incidence of tipping in tip-type restaurants remained roughly constant over this period, increasing slightly from 79.3 percent in 1983 to 81.1 percent in 1986. Lines 7 and 8 show that tipping occasion food and beverage expenditures and tips both increased moderately at tip-type restaurants between 1983 and 1986. However, the rate of increase was marginally greater for tips than for food and beverage expenditures. This is reflected in the increase in the tipping rate, from 14.6 percent in 1983 to 15.1 percent in 1986, shown in line 9. Finally, as shown in line 10, the tipping percentage increased from 13.0 percent in 1983 to 13.5 percent in 1986.[8] This increase in the tipping percentage is a result of the combined impacts of the increase in the tipping rate and the relative stability in the incidence of tipping occasions.

Table 1. Dining-Out Occasions, Food and Beverage Expenditures, and Tips: 1983-1986 (In Millions)

Item	Year			
	1983	1984	1985	1986
1. Dining-out occasions	14,645	15,094	15,134	15,047
2. Tip-type restaurant occasions	4,254	4,309	4,140	3,895
3. Line #2/line #1	29.0%	28.5%	27.4%	25.9%
4. Food and beverage expenditures at tip-type restaurants	$40,766	$42,072	$41,548	$41,120
5. Tipping occasions at tip-type restaurants	3,375	3,446	3,280	3,158
6. Incidence of tipping (line #5/line #2)	79.3%	80.0%	79.2%	81.1%
7. Tipping occasion food and beverage expenditures at tip-type restaurants	$36,345	$37,498	$37,021	$36,818
8. Tip expenditures at tip-type restaurants	$5,315	$5,575	$5,532	$5,566
9. Tipping rate (line #8/line #7)	14.6%	14.9%	14.9%	15.1%
10. Tipping percentage (line #8/line #4)	13.0%	13.3%	13.3%	13.5%

Tip Amount Distributions

Although the average tipping rates shown in Table 1 are very close to the conventional 15 percent figure often cited for restaurant tipping, these overall rates conceal a great deal of variation on individual tipping occasions. The percentage distributions of tips in Table 2 show that, in each of the years 1983 through 1986, only about one-fifth of all tips left at tip-type restaurants were within one percent of the conventional 15 percent figure. Another one-fifth were in the range of 20 percent or more, while tips of less than 10 percent comprised about one-tenth of all tips left.

The year-to-year changes in the annual distributions of tips shown in Table 2 parallel the moderate 1983-1986 increase in the overall tipping rate shown in line 9 of Table 1. Table 2 shows, for example, that in 1983 23.4 percent of tips were in a "low" range of less than 12 percent, 49.9 percent were in a "medium" 12 to 18 percent range, and 26.7 percent were in a "high" range of 18 percent or more. By 1986, however, only 21.1 percent of tips were in the low range, while 49.1 percent were in the medium range and 29.8 percent were in the high range.

Table 2. Percentage Distribution of Tips in Tip-Type Restaurants on Tipping Occasions: 1983-1986

Amount of Tip (In Percent)	Year			
	1983	1984	1985	1986
Less than 10.0	10.6	10.1	9.9	9.3
10.0-11.9	12.8	12.3	12.2	11.8
12.0-13.9	16.0	15.9	15.4	15.2
14.0-15.9	20.3	19.9	19.8	20.0
16.0-17.9	13.6	13.8	13.6	13.9
18.0-19.9	7.1	7.2	7.5	7.9
20.0 or more	19.6	20.6	21.6	21.9

Cross-Sectional Data

Tables 3 and 4 present estimates for tip-type restaurants categorized by location and by type of restaurant. The figures in these tables are for 1986 only.[9]

Geographic Patterns

The data in Table 3 are classified by Census Division (regional groupings of states defined by the Census Bureau) and by size of metropolitan area. These data show that 1986 tipping percentages and tipping rates varied both by region and by city size. The relative variations in tipping percentages from category to category were greater than the variations in tipping rates, however. This was because variations in the incidence of tipping across regions and city sizes were correlated with the tipping rate variations. Categories with high tipping rates tended to have high incidences of tipping as well, while those with low tipping rates generally showed low incidences of tipping.

The regional data in Table 3 show that 1986 tipping rates varied from a low of 13.7 percent in the East South Central states to a high of 16.3 percent in New England. Tipping percentages displayed a greater relative variation, however, ranging from a low of 11.5 percent in the East South Central and West South Central states to a high of 15.2 percent in New England.[10] The greater variation in tipping percentages has to do with the fact that the incidence of tipping also varied, from less than 70 percent in the East South Central and West South Central states to nearly 90 percent in New England.

The city size data in Table 3 show a similar relationship among variations in tipping rates, tipping percentages, and the incidence of tipping. Tipping rates were higher the larger the size of the city, and they were in general higher in metropolitan areas than in nonmetropolitan areas. Average 1986 tipping rates varied between a low of 13.8 percent in nonmetropolitan areas and a high of 15.8 percent in cities with populations of more than 2.5 million. The relative varia-

tion in tipping percentages was greater, with tipping percentages ranging from a low of 11.6 percent to a high of 14.7 percent.[11] Once again, the greater variation in tipping percentages reflected sizable variations in the incidence of tipping. The percentage of dining occasions on which tips were left ranged from a low of 72.6 percent in nonmetropolitan areas to a high of 87 percent in cities with populations of more than 2.5 million.

Table 3. Dining Occasions and Tipping at Tip-Type Restaurants, by Census Division and Size of Metropolitan Area: 1986

Item	Percentage Distribution of Dining Occasions	Percentage of Dining Occasions With Tips	Tipping Rate (Percent)	Tipping Percentage
Census Division				
New England	6.0	88.4	16.3	15.2
Mid-Atlantic	16.7	87.1	16.0	14.9
East North Central	19.5	83.7	14.9	13.6
West North Central	7.2	71.7	14.0	11.7
South Atlantic	15.7	82.2	15.3	13.8
East South Central	4.1	69.4	13.7	11.5
West South Central	8.9	68.2	14.2	11.5
Mountain	5.5	82.9	14.5	12.8
Pacific	16.5	81.6	15.0	13.4
Metropolitan Area Size				
More than 2.5 million	23.8	87.0	15.8	14.7
1.0-2.5 million	22.8	83.9	15.3	13.8
Less than 1.0 million	34.5	79.7	15.0	13.2
Nonmetropolitan	18.8	72.6	13.8	11.6

Restaurant Types and Practices

Table 4 presents estimates for tip-type restaurants classified by detailed restaurant type (mainly determined by the principal kind of food served) and by restaurant practices (whether or not credit cards and reservations are accepted, and alcoholic beverages served). While the average tipping rates shown in Table 4 are all between 14 percent and 16 percent, the variations in tipping percentages and in the incidence of tipping are somewhat greater. Patterns in variations are not as evident as in Table 3, however.

Table 4. Dining Occasions and Tipping at Tip-Type Restaurants, by Restaurant Type and Restaurant Practices: 1986

Item	Percentage Distribution of Dining Occasions	Percentage of Dining Occasions With Tips	Tipping Rate (Percent)	Tipping Percentage
Restaurant Type				
Full Menu	57.6	81.9	15.2	13.6
Seafood	4.5	85.4	14.1	12.9
Mexican	4.6	85.8	14.8	13.7
Chinese	4.9	90.6	15.0	14.2
Italian	2.5	88.2	15.8	14.8
Hotel	8.1	86.6	15.4	13.8
Retail	4.5	62.8	15.6	12.3
Restaurant Practices				
Accepts credit cards	45.0	92.0	15.3	14.5
Also:				
Accepts reservations and serves liquor	22.9	93.8	15.5	14.8
Accepts reservations; no liquor	3.0	86.1	14.0	12.5
Serves liquor; no reservations	12.4	93.1	15.4	14.8
No reservations; no liquor	6.7	86.6	14.6	13.0
Does not accept credit cards	52.3	71.7	14.7	11.7
Not known whether accepts credit cards	2.6	82.9	14.7	13.2

Except for restaurants located in hotels or in retail establishments, the restaurant type categories in Table 4 are based on the principal kind of food served. Restaurants with varied menus ("full-menu" restaurants) accounted for nearly 60 percent of 1986 tip-type restaurant occasions. Restaurants in categories which did not account for at least two percent of such dining occasions are not included.[12] Table 4 shows that average 1986 tipping rates ranged from a low of 14.1 percent in seafood restaurants to a high of 15.8 percent in restaurants serving Italian food. Tipping percentages varied from a low of 12.3 percent for restaurants in retail stores to a high of 14.8 percent in Italian restaurants. The low tipping percentage for retail-store

restaurants was due mainly to the low incidence of tipping there; although the average tip left was greater than 15 percent, tips were left on fewer than two-thirds of the dining occasions. This could be because some of the retail-store dining operations may have been lunch counters or even cafeterias.

Table 4 shows that 1986 dining occasions in tip-type restaurants were divided fairly evenly between restaurants which accepted credit cards and those which did not (45 percent and 52.3 percent, respectively). Tipping rates were also close for the two categories, averaging 15.3 percent for credit-card establishments and 14.7 percent for establishments not accepting credit cards. The tipping percentages for the two categories were further apart, however, averaging 14.5 percent for the former and only 11.7 percent for the latter. This was due to substantial differences in the incidence of tipping. While tips were left on 92 percent of dining occasions in credit-card restaurants, the corresponding figure for restaurants not accepting credit cards was only 71.7 percent. Among restaurants which did accept credit cards, Table 4 also shows that tipping rates, tipping percentages, and the incidence of tipping were all higher for restaurants which served alcoholic beverages than for those which did not.

Conclusion

Although patronage at tip-type restaurants decreased over the 1983-1986 period, tipping behavior at tip-type restaurants did not show any decline. Despite some variation in the size of tips left on individual tipping occasions, estimated average tipping rates were remarkably close to the 15 percent figure usually cited as a norm for restaurant tipping. Both tipping rates and the incidence of tipping actually increased slightly between 1983 and 1986, with the result that the average tipping percentage also increased, from 13 percent in 1983 to 13.5 percent in 1986.

While 1986 tipping rates and tipping percentages both varied by restaurant location and type, the relative variation in tipping percentages was somewhat greater. Lower tipping percentages generally resulted at least as much from lower incidences of tipping as they did from lower tipping rates. Tipping rates and tipping percentages were consistently higher the more urban the area, and they were generally highest in the northeastern states and lowest in the interior states. Restaurants located in retail stores and restaurants not accepting credit cards showed lower tipping percentages than other restaurants, mostly because the incidence of tipping was low at these establishments. Among restaurants which did accept credit cards, those which also served alcoholic beverages had higher tipping rates, tipping percentages, and incidences of tipping than those which did not. Although tipping percentages in this study varied across restaurant categories, even the categories with the lowest figures had estimated tipping percentages of at least 11.5 percent, well in excess of the TEFRA minimum of eight percent.

Notes and References

1. The NPD restaurant diary panel was ongoing before IRS contracted with SRL. The IRS-SRL involvement resulted in tipping data being added to the data already being collected by NPD.

2. Households reported on a rotating basis. Each "family" household recorded expenditures during one two-week period each quarter, while each "individual" household recorded expenditures during one two-week period each year.

3. Although the SRL data included tabulations classifying tipping behavior by economic and demographic characteristics of tippers, such data are not presented here because they are not relevant to the IRS objective of developing tip income reporting guidelines dependent upon the characteristics of the establishments in which tipping occurs.

4. The annual cycle used by NPD extends from December of one year through November of the next. A calendar year reference is used in this report for convenience.

5. These restaurants are termed "high tipping-type" restaurants in the reports SRL furnished to IRS under the study contract.

6. Although SRL's reports to IRS included some data for 1979 and 1982, SRL broke out data for the tip-type restaurants which are the subject of this report only for the years 1983 through 1986.

7. For example, among establishments where tipping is not customary, total eat-in and carry-out occasions at hamburger, pizza, and chicken places increased from 4.06 million in 1983 to 4.77 million in 1986, an increase of more than 17 percent.

8. Tipping percentage figures in this report are greater than the product of the tipping rate and the incidence of tipping occasions because average food and beverage expenditures on tipping occasions were higher than those on nontipping occasions.

9. SRL's reports to IRS included data of the types shown in Tables 3 and 4 for the years 1983-1985 as well. However, these data do not differ markedly from the most recent 1986 data.

10. While the lowest tipping rate amounted to 84 percent of the highest tipping rate, the lowest tipping percentage was only 76 percent of the highest tipping percentage.

11. The lowest tipping rate was 87 percent of the highest; the lowest tipping percentage was only 79 percent of the highest.

12. In the aggregate, these categories accounted for 13.3 percent of 1986 tip-type restaurant dining occasions.

Employee Plans Filings Since ERISA

by
Walter Marciniak
Determination Branch
Operations Division
Office of the Assistant Commissioner (EP/EO)
and
Fred J. Riley
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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This article examines trends in employee plans filings since Congress enacted the Employee Retirement and Income Security Act (ERISA) of 1974. The analyses also consider the impact of subsequent law changes since ERISA on pension plan filings. The Employee Plans (EP) examination and determination programs are used by the Service to achieve the highest degree of benefit security in the private pension system.

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Introduction

The Service's role in regulating employee plans is not a widely known story. ERISA greatly expanded this role, and this article details the growing Service involvement since 1974. Prior to the passage of ERISA, many participants of private pension plans experienced financial hardships after retirement due to the inadequate protection of employee benefits. With a few exceptions, the deficiencies of most pension plans were attributed to inadequate vesting, underfunding, business failures, and benefits designed to favor top management. Congress passed ERISA to eliminate the deficiencies inherent in most pension plans and to encourage private retirement planning for rank and file employees. Also, under ERISA, workers not covered by a pension plan were encouraged to provide their own financial security by establishing an Individual Retirement Account (IRA).

ERISA established and strengthened minimum requirements for the reporting, funding, vesting, disclosure, and coverage of retirement plans. Subsequent statutes were enacted to further enhance the pension security of rank and file plan participants and their survivors. For example, the Economic Recovery Tax Act of 1981 (ERTA) increased deductions for contributions to an IRA and permitted all taxpayers with income--even those already covered by a retirement plan--to establish an IRA.

In 1982, the Tax Equity and Fiscal Responsibility Act (TEFRA) set a minimum benefit in top heavy plans for all participants. Top heavy pension plans are designed primarily to benefit the higher paid executives in a company. This act also reduced the amount of compensation

that may be sheltered from tax by being placed in a qualified retirement plan. In addition, TEFRA increased the scope of pension coverage to include leased employees and employees of organizations performing management functions.

The Retirement Equity Act of 1984 (REA) introduced tougher joint and survivor annuity requirements. It also expanded the benefits of younger employees and women. The Tax Reform Act of 1986 (TRA) provided for even faster vesting and broader coverage for employees than its predecessors. TRA also reduced the amount of credit employers can take for Social Security benefits, augmented private retirement plan benefits, and restricted IRA deduction limits.

This article first presents time series data on the volume of retirement plans (Form 5500 series) returns filed. Second, information is presented on how the EP examination and determinations programs are used to achieve voluntary compliance with the tax laws. Next, attention will be focused on the impact of recent law changes on pension returns filings. Finally, this article concludes with a look ahead at EP retirement plan filings in the nineties.

Form 5500 Series Return Filings

Form 5500 series returns were introduced in 1975, immediately after the passage of ERISA. At that time, there were only three return types in the Form 5500 series: Form 5500 presented a report for plans with 100 or more participants; Form 5500-C provided information about plans with less than 100 participants; and Form 5500-K (Keogh) supplied plan data about self-employed individuals. Authority for the enforcement of plan participants' rights were spread among the Service, the Department of Labor (DOL), and the Pension Benefit Guaranty Corporation (PBGC). Separate filings were made to all three agencies. However, since 1977, EP returns have been filed only with the Service. Hence, the Service now processes all employee plan returns and provides return information to the other agencies by magnetic media and by paper documents.

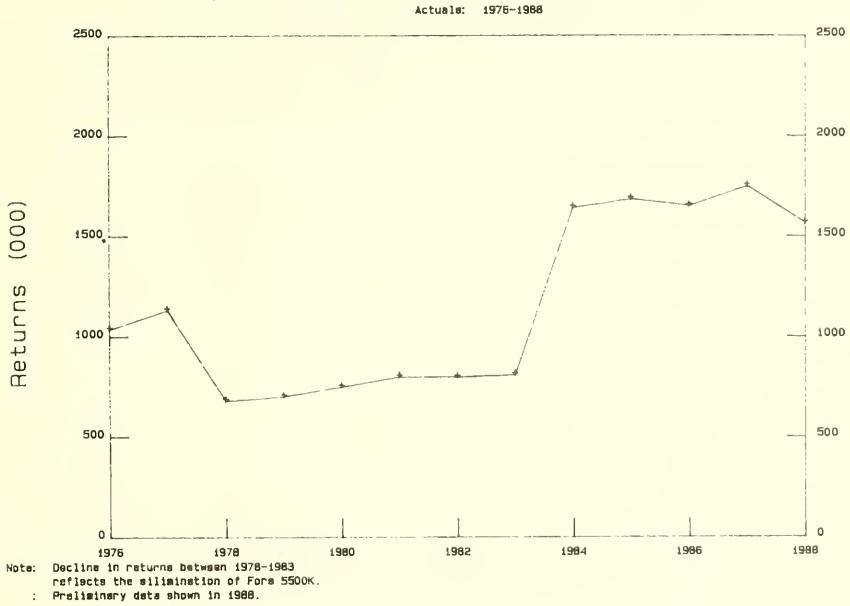
Figure 1 shows the growth in the number of employee plans filed with the Service for 1976-1988. The Paperwork Reduction Act of 1978 eliminated the reporting requirements for nearly all of the 400,000 one-participant Keogh plans. This caused a significant decrease in returns filed in 1978.

The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) created parity between Keogh and small corporate plans. In 1984, the reporting requirements for one-participant Keogh plans were reinstated to reflect this parity with the one-participant corporate plan. Form 5500-K, used to file Keogh plans, was eliminated and replaced by either Form 5500-C or Form 5500-R. This reinstatement created the significant increase in the 1984 return filings (see Figure 1).

In enacting ERISA, Congress conferred substantial new rights to pension plan participants. To enforce these rights, participants must have access to information regarding the operation of the plan. Therefore, the Form 5500 return series are available for public inspection (unlike most other returns which are guarded with the utmost confiden-

tiality). By agreement between the Service and DOL, the general public can view and obtain copies of these returns at: The Pension and Welfare Benefits Administration, U.S. Department of Labor, Room N5644, 200 Constitution Avenue, N.W., Washington D.C. 20210.

Figure 1.
Employee Plans Returns Filed Since ERISA



The volume of EP returns is small (1.6 million versus over 107 million individual returns filed). Nonetheless, the Service has pushed to modernize and consolidate the processing of EP returns to promote efficiency and improve service to taxpayers. In 1987, a few practitioners were selected for a pilot program which allowed EP returns to be electronically filed with the Service. As this program expands, electronic filing is expected to improve productivity and enhance quality of processing by posting returns directly to the Service's computerized data base. The increased use of this filing method is expected to significantly reduce the cost of return processing and storage. In addition, beginning on July 1, 1989 the Service plans to consolidate EP returns processing from seven to four sites to reduce costs. This consolidation of the relatively few EP return filings will permit personnel in the four sites specializing in EP-related matters to become more expert in these matters and provide better information and services to the taxpaying public.

EP Examinations

The EP examination program insures that qualified employee pension benefit plans are operated solely for the employees' benefit. Hence, the Service's main concern is the safety of the plans' assets and their use to benefit employees upon retirement. The Service is, of course, also concerned with the verification of excise taxes that are due when plan managers engage in transactions or activities that jeopardize the fiscal integrity of pension benefit plans. The Service has and continues to examine plans for the existence of prohibited transactions, inadequate funding, reversions, vesting, and discriminations in contributions or benefits as part of its verification program. Table 1 shows the number of EP returns examined in fiscal years 1977-1988.

Table 1. Employee Plans Returns Examined, Fiscal Years 1977-1988

Fiscal Year	Returns Examined (000)	Fiscal Year	Returns Examined (000)
1977	9	1983	22
1978	12	1984	28
1979	25	1985	25
1980	19	1986	21
1981	20	1987	9
1982	11	1988	21*

*Preliminary data.
Source: Annual Report, Internal Revenue Service.

During a plan examination, EP specialists locate the related income and excise tax returns filed by the plans as part of the overall verification effort. Forms examined also include Form 990-T, filed by a plan which operates an investment business activity, and Form 5330, an excise tax form filed by persons who have engaged in activities contrary to the exclusive benefit of the plan's participants. The disclosure of pension plan examination results are strictly prohibited, as is the case for all returns examined by the Service.

Table 2 shows the total amount of excise taxes collected on EP returns since the enactment of ERISA. Total excise taxes collected are derived from IRA related and qualified plan related taxes. IRA related taxes include a six percent excise tax on excess contributions and a 50 percent tax on insufficient distributions after age 70 1/2. Qualified plan related taxes are derived from several levels of tax assessments. For example, qualified plans are assessed a five percent tax on prohibited transactions, a five percent tax for the insufficient funding of a pension plan, and a six percent tax on excess contributions to a custodial account. In 1986, a 10 percent tax was levied on plan assets that revert to an employer, and in 1987, a 10 percent tax was imposed on non-

deductible employer contributions. The significant increase in total excise taxes for fiscal year 1987 is attributed to the tax levied on reversions (see Table 2).

Table 2. Excise Tax Collected on Employee Plan Returns, Fiscal Years 1976-1988 ($ in 000)

Fiscal Year	Total Excise Taxes	IRA Related	Qualified Plan Related
1976	$ 920	$ 712	$ 208
1977	2,067	1,748	319
1978	2,990	2,455	535
1979	2,050	1,106	944
1980	2,844	797	2,047
1981	4,485	1,109	3,376
1982	7,492	1,066	6,426
1983	8,675	1,370	7,305
1984	11,262	2,016	9,246
1985	14,192	2,407	11,785
1986	17,021	3,366	13,655
1987	291,159	5,462	285,697*
1988	171,000	7,820	163,180

* The increase reflects an excise tax on reversions and represents receipts reported for both FY 1986 and FY 1987. Separate estimates of receipts for FY 1986 and 1987 yield $134,021 and $174,159, respectively.
Source: Annual Report, Internal Revenue Service

EP Determinations

Employers with pension plans that satisfy the requirements of the Internal Revenue Code pertaining to employee benefits enjoy a significant tax-saving benefit--a current deduction for contributions made to the plans. However, employees generally do not pay income taxes on these contributions until the funds are distributed--usually at retirement. The Service encourages employers to request a determination on the qualification of their pensions plans to be assured that contributions to the plan are tax deductible.

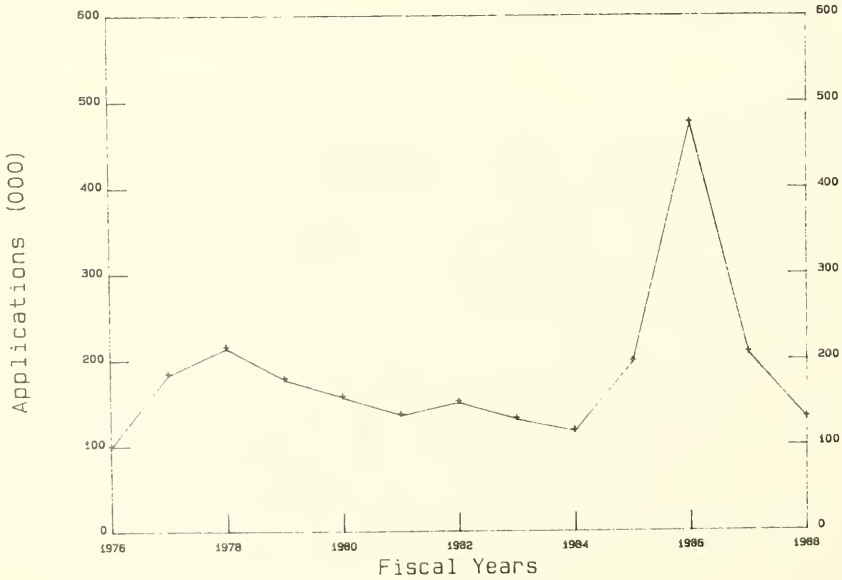
Employers are reluctant to establish or amend their pension plans until they receive advance assurance of the plan qualification through the determination letter program. The issuance of a determination letter assures an employer that the tax exempt status of its pension plan will not be retroactively revoked unless certain conditions occur. These conditions include a pension plan not operating in accordance with the stated terms of the plan document, or a law change becoming effective after the determination letter was issued. According to Taxpayer Compliance Measurement Program (TCMP) findings, approximately 95 percent of all employers who maintain individually designed plans request a determination letter.

EP Determination Applications

When enacted in 1974, the ERISA statutes established the Office of the Assistant Commissioner (Employee Plans and Exempt Organization) within the Service to implement, administer, and enforce employee retirement plans tax laws. Because of overwhelming demands under the new laws, the Service immediately suspended the issuance of all determination letters and began revamping the program for the new era. The EP determination program reopened on January 1, 1975 for the less complicated pension plans. This program introduced a new determination application, the Form 5300 series, that replaced the old Form 4500 series.

On November 4, 1975, the Service reopened the determination letter program for all plans. Various incentive programs were tried, generally unsuccessfully, to encourage employers to make timely amendments to their existing plans. As indicated in Figure 2, receipts for applications did increase after 1975, which was followed by a moderate decline over the next several years. After passage of TEFRA, REA, and TRA the Service pursued a different course in encouraging employers to timely amend their pension plans. Under this new approach, filers were provided tax deductions inversely proportional to the lateness of amending their plans. Thus, the number of determination applications increased significantly in 1986 (see Figure 2).

Figure 2.
Employee Plans Determination Applications Filed,
Actuals: 1976-1988



With the new rights conferred to plan participants by ERISA, employees are provided with access to information regarding the operation of their plans. Form 5300 series (applications for determination letters) are open to the public for inspection. This accessibility allows participants to monitor the operations of their plans. However, if the plan covers fewer than 26 participants, then the application is made available only to plan participants.

User Fees

The Revenue Act of 1987 established a schedule of user fees for an EP determination letter. As a result, all applicants requesting an EP determination letter after January 1988 must pay for the service. The service fees range from $100 to $1,000 per determination letter. Costs of this magnitude may discourage many small employers with plans from requesting a determination letter. As a result, the anticipated lower filing level of EP applications may help alleviate the strain on the Service's resources needed to carry out the mandate of major pension tax law changes.

The need to raise revenue through user fees and the desire to encourage employers to provide pension benefits for their employees have created a potential problem for small employers. A plan established by an employer who cannot afford the EP application fee will not be assured that the plan is qualified. If a plan is found not qualified upon examination, the Service generally levies the resulting adverse tax retroactively.

For all open years (time periods that a plan is nonqualified and the statute of limitations has not expired), income tax related adjustments are generally made retroactively for all vested participants. Hence, the employers' tax deductions must be adjusted, amended Forms W-2 must be filed, a taxable return for the trust must be filed, and plan participants must file amended tax returns to reflect the additional income. This procedure may penalize small employers (who are unable to afford a user fee) and their employees, and possibly place a costly administrative burden upon the Service.

Looking Ahead

Employee plans increased slowly but steadily over the years. This growth may be curtailed, however, because of new legislation that increased employers' cost of maintaining retirement plans by increasing benefits for rank and file employees. For example, the new laws accelerated vesting time and placed limitations on the amount by which plan benefits may be reduced by other forms of retirement (i.e., social security coverage). The provision of joint survivor annuities and qualified domestic relations also increased the employers' cost of maintaining a pension plan. The revenue enhancement aspects of the new law may not only dampen the growth of new plans, but this may cause some existing plans to terminate. It too early to assess the impact of user fees on EP filings because the program started February 1, 1988. There are other revenue generating methods that may affect the growth of

pension plans. These methods include the lowering of amounts that may be contributed to a qualified salary reduction arrangement, limiting the amount of a defined benefit plan contributions, and restricting IRA eligibility.

From the employers' perspective, the cumulative effect of the new rules associated with maintaining retirement plans and the lower tax rates could make establishing a qualified retirement plan less attractive. Fewer plans may be established in the future, and some existing plans may be terminated.

Filing Characteristics of U.S. Passport Applicants Resident Abroad

by
Bryan L. Musselman
Office of the Assistant Commissioner (International)

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A random sample of 615 U.S. passport applications received by the State Department from overseas embassies and consulates was matched against the IRS' individual master file. This paper outlines some of the tax filing characteristics of this group who have historically been among the most noncompliant of U.S. taxpayers.

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Background

During 1985 and 1986, the General Accounting Office (GAO) conducted an 11-month study of underreporting of income and nonfiling of individual tax returns among Americans resident abroad.[1] The study group was able to obtain social security numbers (SSNs) of 3,905 individuals residing abroad from an unidentified source. Matching this data against the past three years of individual master file data revealed a nonfiling rate of 61 percent.[2]

Due to this extremely high nonfiling rate among Americans resident abroad, Congress included section 6039E in the Tax Reform Act of 1986. This new provision requires the Department of State to supply the Internal Revenue Service with the names, addresses, social security numbers, and dates-of-birth of all passport applicants, including those who are residing abroad.[3]

In 1988, the IRS began receiving quarterly tapes from the Department of State with the required information. Approximately 73,000 of these applications were received from overseas embassies and consulates during the first year of operation. The IRS will match this data against the individual master file (IMF) to determine whether these individuals are currently filing tax returns. This will allow the IRS to estimate the level of nonfiling among Americans resident abroad, and undertake the appropriate education/enforcement actions to help improve compliance among this group.

This article analyzes a random sample of 615 of these U.S. passport applications received from overseas embassies and consulates. The analysis is based on the assumption that those who apply for passports from abroad are currently living abroad. The article examines the location of Americans resident abroad, the age of overseas passport applicants, the addresses given on the passport application versus the addresses currently on the individual master file, how many are supplying the correct social security number on their passport application, the nonfiling rate among this group of individuals, and the tax characteristics of those in this group who filed a 1987 tax return.

Location of Americans Resident Abroad

The addresses in this sample of 615 passport applications were used to estimate the distribution of U.S. citizens living overseas. The results of this analysis are shown in Table 1.

Table 1. Location of Americans Resident Abroad

Passport Address	Percentage
Europe	44.1%
Asia, Australia, New Zealand, & Pacific Islands	28.9
Central & South America, Caribbean	11.1
Canada	10.1
Africa & Middle East	5.8

Currently, there is no accurate measurement of the total number of Americans resident abroad by country. As the database of Americans applying for passports from abroad is built, IRS should be able to better determine the number and location of Americans resident abroad. Although the Department of Defense and the Department of State have accurate records of the number of Americans employed by the U.S. government who live overseas by country, no accurate data exists for the number of Americans who live abroad and who are not employed by the U.S. government.[4] With this data, IRS will be better able to estimate the noncompliance rate among Americans resident abroad.

Age of Overseas Passport Applicants

The sample of 615 passport applications indicates that approximately 54.2 percent of passport applicants were under the age of 22, 41.6 percent were between the ages of 22 and 65 (the average age of this group was 36.1 years), and 4.2 percent were over the age of 65. Passports are issued for ten years to those who are 18 years or older, and for five years to those who are younger than 18 years of age. The remainder of this paper will be examining those who are currently between the ages of 22 and 65--those who would most likely be required to file an individual income tax return.

Address Analysis

Comparing each individual's address as reported on his/her passport application (which were all foreign addresses) against the most recent address for those individuals on the IMF reveals many discrepancies. Table 2 compares the addresses for both those who filed a 1987 tax return and those who were stop-filers (i.e., they previously filed a tax return with the IRS but did not file for calendar year 1987).

Table 2. Comparison of Address on Passport Application to Address on IMF, Tax Year 1987 Filers and Stop-filers

	Tax Year 1987 Filers	Stop-Filers
IMF Address is:		
Same as passport address	27.7%	25.6%
APO/FPO address	38.5	4.7
Different address (U.S.)	27.7	53.5
Different address (foreign)	6.2	16.3

Having an Army Post Office (APO) or Fleet Post Office (FPO) address on the master file is consistent with having a foreign street address on the passport application. Those who are in the military and stationed abroad, as well as some civilian U.S. government employees stationed abroad, have APO/FPO boxes located in either New York or San Francisco. Mail originating in the United States can be sent to these APO/FPO boxes for faster delivery to these individuals at their foreign addresses. Thus, the addresses on two-thirds of the passport applications of current tax return filers were consistent with those contained in IRS' master file.

However, among those who are stop-filers, the results of the address analysis is quite different. Among stop-filers, the IRS only had the correct address for approximately 30 percent of the passport applicants who applied for a passport from overseas. Since all stop-filers are automatically subject to a follow-up inquiry as to liability for filing a tax return, the ability to retrieve an updated address from a passport application will greatly benefit IRS' tax delinquency efforts. Among the stop-filers, 11.6 percent had filed a tax return for 1986, and 20.9 percent had filed a tax return for 1985.

Inclusion of SSN on Passport Application

Prior to January 1, 1988, passport applicants were not required to include their SSN on their passport application. In fact, the words "Not Mandatory" were printed under the field for the SSN on the passport application. However, with enactment of Section 6039E of the Tax Reform Act, the passport application was modified to include the following statement:

> Federal Tax Law: Section 6039E of the Internal Revenue Code of 1986 requires a passport applicant to provide his/her name (#1), mailing address (#2), date of birth (#5), and social security number (#6). If you have not been issued a social security number, enter zeroes in box #6. Passport Services will provide this information to the Internal Revenue Service routinely. Any applicant who fails to provide the required information is subject to a $500 penalty enforced by the IRS. All questions on this matter should be referred to the nearest IRS office.

Among passport applicants between the ages of 22 and 65 who had a foreign address on their application, 60.8 percent included an SSN, 18.4 percent indicated that they were not required to have an SSN, 16.1 percent left the SSN field blank on the application, and 4.7 percent gave erroneous SSNs (i.e., SSNs belonging to other individuals). The study methodology could not distinguish between applicants who were nonfilers and applicants who used incorrect SSNs which did not belong to another individual. Therefore, the 4.7 percent figure is a lower bound estimate of those not using their own SSN.

Nonfiling Rate

Among those who included an SSN on their passport application, 40.9 percent filed a tax return for calendar year 1987, 27.0 percent are stop-filers (i.e., they have previously filed a tax return but did not file for calendar year 1987), and 32.1 percent have never filed a tax return with the IRS.[5] Assuming that all U.S. citizens living overseas between the ages of 22 and 65 should be filing a tax return, the nonfiling rate is estimated to be 59.1 percent.[6] This nearly matches the GAO estimate of 61 percent nonfiling among Americans resident abroad.

However, this nonfiling rate calculation excludes those who indicated that they were not required to have an SSN on their passport application and those who simply left the SSN field blank. If one assumes that these people are 100 percent compliant, then the nonfiling rate falls to 38.7 percent. However, if one assumes that **none** of these people are filing, then the nonfiling rate would increase to 73.3 percent. Under these assumptions, the upper and lower bounds of the nonfiling rate are 73.3 percent and 38.7 percent respectively, with the likelihood that the actual nonfiling rate would be closer to the upper bound, as explained below.

In an attempt to estimate the nonfiling rate among those who either indicated they were not required to have an SSN or who simply left the SSN field blank on their passport applications, further research of the master file was undertaken. The name and address on the passport application of each of these individuals were matched to IRS name and address records, revealing the SSNs of five individuals.[7] Among this group, one was a current filer, three were stop-filers, and one had never filed a tax return with the IRS. If this small group of individuals is representative of the group of individuals who did not give their SSNs on their passport applications, the nonfiling rate is probably worse than 59.1 percent.

Tax Characteristics of 1987 Filers

Table 3 compares the average tax characteristics of U.S. citizens living abroad (as defined in this article) with those of all tax year (TY) 1987 individual tax return filers.[8]

Table 3. Average Tax Characteristics--U.S. Citizens Living Abroad Versus All TY 1987 Individual Tax Return Filers

Average Characteristic	Abroad	All Filers[9]
"District Office 98" returns (i.e., returns with an overseas address that are thus under the jurisdiction of the Assistant Commissioner (International))	30.8%	NA
Number of Exemptions	2.5	2.0
Total Wages	$22,107	$20,259
Adjusted Gross Income (AGI)	$19,763	$26,039
Taxable Income	$11,480	$17,360
Total Income Tax	$1,798	$3,467
Tax as a Percentage of Taxable Income	15.7%	20.0%

One of the main tax advantages for U.S. citizens residing overseas is the ability to exclude up to $70,000 of foreign earned income and exclude or deduct certain foreign housing amounts. This is done in the "Income" section of Form 1040, prior to computing adjusted gross income (AGI). Thus, if taxpayers claim the foreign earned income exclusion (or housing exclusion/deduction), they presumably would have an AGI considerably less than their wages. However, in this sample, only 18.5 percent reported an AGI which was at least $5,000 less than their total wages.

The low percentage of individuals taking the foreign earned income exclusion (or housing exclusion/deduction) may be due to at least three factors. First, those that are not taking advantage of this exclusion may not be eligible for the exclusion. In order to claim either the foreign earned income exclusion or the foreign housing exclusion or deduction, a person must have foreign earned income, must have their tax home in a foreign country, and must satisfy certain time requirements in the foreign country.[10] In addition, employees of the U.S. government are not permitted this exclusion. Second, people may be unaware of the tax law as it pertains to excluding foreign earned income or foreign housing expenses. Third, due to the methodology employed, other sources of income (e.g., interest) may be offsetting the exclusion, thus "hiding" the full value of the exclusion.

In addition, only 6.2 percent claimed any credits of an amount greater than $15, such as the foreign tax credit. Although some individuals may deduct foreign income taxes on Schedule A, most use the credit instead since it generally results in a lower tax.

Conclusion

The IRS has a powerful new source of information at its disposal to track those who reside overseas and do not comply with the U.S. individual income tax filing requirements. Every ten years, U.S. citizens who live abroad must renew their passports, unless they never plan to travel outside of that country again. Thus, those who for years have been "outside" of the information reporting economy are now finding they are no longer hidden from the IRS.

With this new source of information, IRS can begin to send appropriate correspondence to these people to notify them of the U.S. filing requirements. Also, enforcement action can be initiated on those who continue to ignore their filing requirements. Hopefully, with this new program in place, the nonfiling rate among Americans resident abroad will be dramatically reduced from its current estimated level of 59 percent.

Notes and References

1. U.S. Congress, House, Committee on Government Operations, Foreign Source Income: Problems of Tax Return Nonfiling and Income Underreporting by Americans Living or Investing Abroad, 99th Cong., 2nd sess., H. Report 99-770 (Washington, D.C.: GPO, 1986), pp. 5-7.

2. It was noted in the GAO study that no check was made for the spouse's SSN when checking the master file.

3. The passport applications of those who apply for "Official" and "Diplomatic" passports are excluded from the information received from the Department of State.

4. Bryan L. Musselman, Internal Revenue Service, "Location and Characteristics of Americans Resident Abroad," Trend Analysis and Related Statistics--1988 Update (Washington, D.C.: GPO, 1988), pp. 125-135.

5. The filing history of all primary SSNs was originally requested from the IRS' Individual Master File (IMF). For those SSNs which yielded no information, each SSN was again run against the IMF using the Integrated Data Retrieval System (IDRS), this time assuming each SSN was a secondary SSN. Thus, unlike the GAO study, both primary and secondary SSNs were checked for filing compliance.

6. We can be 95 percent confident that the actual nonfiling rate among passport applicants between the ages of 22 and 65 who voluntarily give their SSN on the passport application is between 51.5 percent and 66.7 percent.

7. An Integrated Data Retrieval System (IDRS) terminal was used to match the names and addresses with SSNs of all those that did not report an SSN on their passport application. The search was limited to those who would have filed in the Philadelphia Service Center, one of ten Service Centers nationwide used to process tax returns. This explains why only five SSNs were discovered.

8. The data for one high income earner was excluded from the sample of passport applicants in order to make the data more representative. The standard deviations for the passport data (less the one high income earner) is as follows:

   - Average number of exemptions--1.5;
   - Average total wages--$18,473;
   - Average adjusted gross income--$15,429;
   - Average taxable income--$12,863;
   - Average total income tax--$2,453.

9. Internal Revenue Service, "Selected Historical Data," Statistics of Income Bulletin, Winter 1988-89 (Washington, D.C.: GPO, 1989), p. 104. The average data was derived by dividing the total figures for each category by the total number of individual returns received.

10. To claim either the foreign earned income exclusion or the foreign housing exclusion or deduction, a person must have foreign earned income, have their tax home in a foreign country, and must be: 1) a U.S. citizen who is a bona fide resident of a foreign country or countries for an uninterrupted period that includes an entire tax year, or 2) a U.S. citizen or a U.S. resident alien who is physically present in a foreign country or countries for at least 330 full days during any period of 12 consecutive months.

Selected Trends in Collection Inventory Revisited

by
Doug Beazley
Operations Research Section
Office of Evaluation and Research
Office of the Assistant Commissioner (Collection)
and
Rusty Geiman
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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The dollar amount in IRS accounts receivable inventory is rising at a very rapid rate. This trend is apparent for the grand total (up 600 percent since 1977), as well as for many of the component Collection programs such as deferred accounts; taxpayer delinquent accounts; currently-not-collectible accounts; and statute expired cases. The growing accounts receivable inventories are a major concern to IRS management and other policymakers, and continue to receive much attention. However, part of this rise simply mirrors the overall growth in the U.S. economy/Federal revenue collections. In addition, when considered as a percentage of Federal receipts, the rise in accounts receivable inventory appears much less alarming, though certainly worthy of continued attention by debt managers. As of the end of fiscal year 1988, total IRS accounts receivable inventory was less than eight percent of total Federal receipts.

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Introduction

Prior editions of this publication have included articles about the IRS Collection function and selected trends in its workload. This article is intended as an update to those previous Collection trend analyses. It focuses on trends in the assessed dollar amounts in Collection inventory for certain program areas. These program areas are: deferred accounts; taxpayer delinquent accounts; and currently-not-collectible accounts.

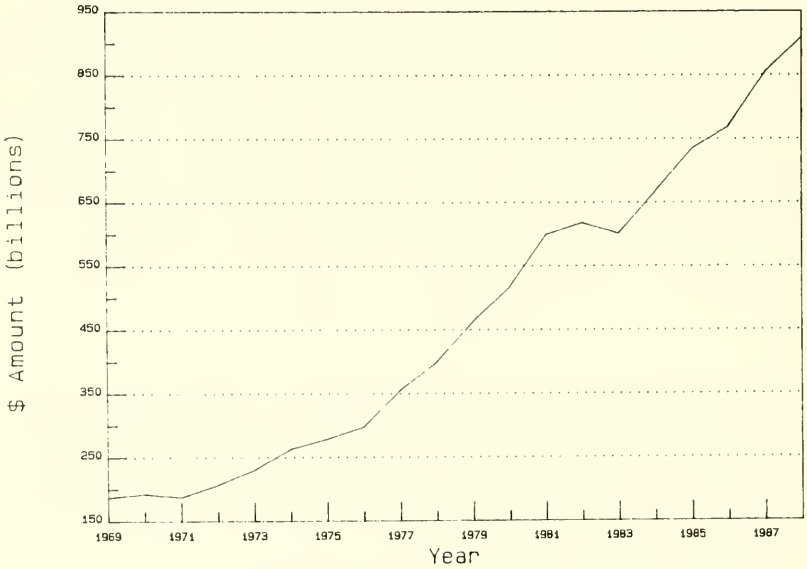
In addition, this article revisits the impact on Collection inventory due to the Resources and Workload Management System (formerly known as the Workload Priority and Selection System). It also presents updated time series data on the uncollected amounts reaching statute expiration. The following narrative highlights the more pertinent aspects of the trends depicted in the accompanying charts. Additional background information on these major Collection program areas/activities is contained in the earlier Document 6011 trend articles [1].

This article begins with some trends in total Federal receipts and total IRS accounts receivable. In general, these are the broader factors that give rise to the specific Collection program activities analyzed in this trend analysis update.

Total Federal Receipts

Mirroring the general economic growth in the United States, Federal tax revenues and other U.S. government receipts have continued to grow over time. As indicated in Figure 1, total Federal receipts have risen from around $190 billion in fiscal year (FY) 1969 to over $900 billion in FY 1988 [2]. During this period, each fiscal year reflected an increase (in absolute terms) over the prior year. The only exceptions to this annual growth pattern are the drops in 1971 and 1983. These exceptions tend to coincide with marked slowdowns in the U.S. economy. The 1983 results may also reflect the broad tax reduction impacts of the Economic Recovery Tax Act of 1981.

Figure 1. Total Federal Receipts: Fiscal Years 1969 to 1988



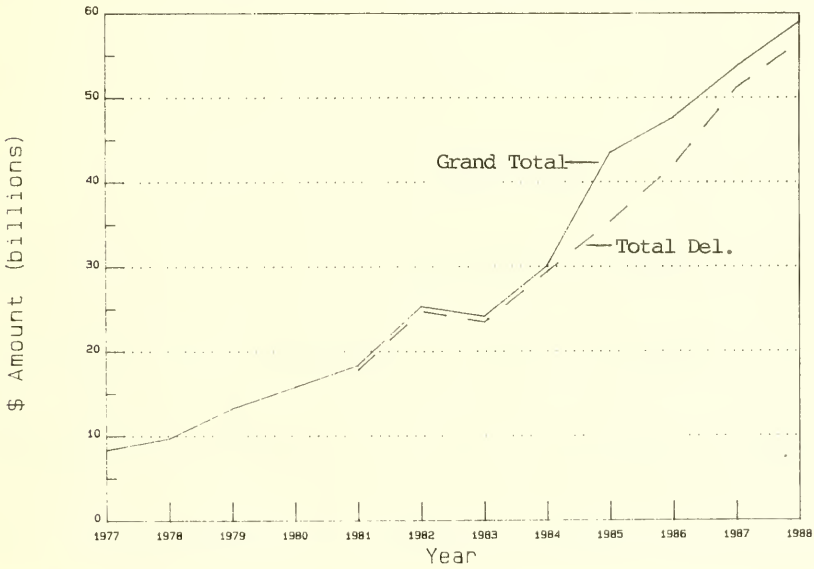
Accounts Receivable

With total receipts rising so sharply, it is not surprising to find similarly sharp increases in the dollar value of IRS accounts receivable inventories. The Service has traditionally defined its total accounts receivable dollar inventory as the assessed dollar amounts still outstanding at the end of any given month. This includes: (a) recent balance due accounts still in notice status; (b) older, more serious, delinquencies being processed in TDA status; (c) those in an installment agreement status; as well as (d) other outstanding liabilities. This latter category generally involves

less active Collection cases such as those classified as "currently-not-collectible" or "deferred" or "other system monitored" (e.g., litigation).

The time series data on IRS accounts receivable dollar inventory (ARDI) are presented in Figure 2. In summary, the growth in **grand total** ARDI has been substantial over the past decade, going from around $10 billion at the end of FY 1978 to $59 billion by 1988. When the available data on **total delinquent** ARDI are considered (i.e., the dashed line in Figure 2 which excludes balance due accounts less than 30 days old), marked growth is still evident [3].

Figure 2. Grand Total and Total Delinquent Accounts Receivable Dollar Inventory



This steep rise in accounts receivable is a major concern to the Service and to policymakers in general. A number of studies and teams have examined this area to discern causes and to identify actions that might be taken to help mitigate the problem [4].

Still, a reasonable assumption is that the overall growth in Federal revenue collections has some impact on the growth of IRS accounts receivable. Indeed, when ARDI is considered as a proportion of total receipts, the results are less alarming. Table 1 expresses the accounts receivable dollar inventory figures as a percentage of total Federal receipts, lagged two years. Receipts are "lagged" two years to approximate a match on tax year (period).

Table 1. Grand Total and Total Delinquent ARDI as a Percent of Total Federal Receipts (lag 2 years)

Year	Grand Total ARDI as a Percent of Receipts	Total Delinquent ARDI as a Percent of Receipts
1977	2.99%	n.a.
1978	3.26	n.a.
1979	3.73	n.a.
1980	3.95	n.a.
1981	3.96	3.84%
1982	4.90	4.78
1983	4.02	3.91
1984	4.87	4.76
1985	7.24	5.87
1986	7.15	6.29
1987	7.31	6.97
1988	7.67	7.36

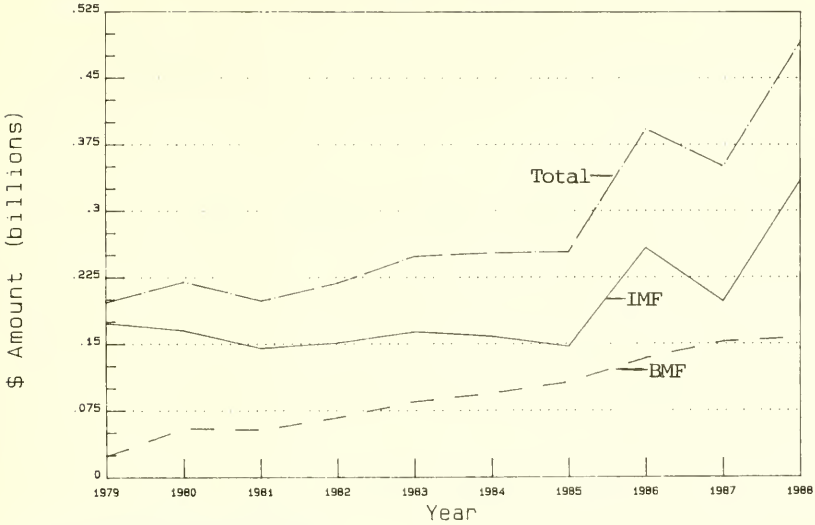
Two observations seem appropriate from the information presented in Table 1. First, despite the large sum of money in accounts receivable inventory, it reflects a relatively small percentage of total Federal receipts (i.e., less than eight percent as of FY 1988). Second, although this percentage is small, it is clearly increasing over time--thus warranting management concern.

Consistent with the overall trend for total ARDI, a growth pattern is apparent in all the various components of Collection workload considered below. However, operational changes in Service programs and information reporting procedures also impact these trend lines. The more relevant of these issues are highlighted in the following discussion.

Deferred Accounts

Deferred accounts are by their nature relatively small liabilities. As is revealed in Figure 3, the total dollar amount in deferral inventory has risen from just under $200 million in FY 1979 to about $490 million in 1988. With the grand total IRS accounts receivable dollar inventory for 1988 well over $50 billion, it is clear that the roughly $0.5 billion in deferred accounts represents a very small "piece of the pie" (less than one percent of 1988 grand total ARDI).

Figure 3. Dollar Amount in Deferred Inventory
IMF, BMF and Total



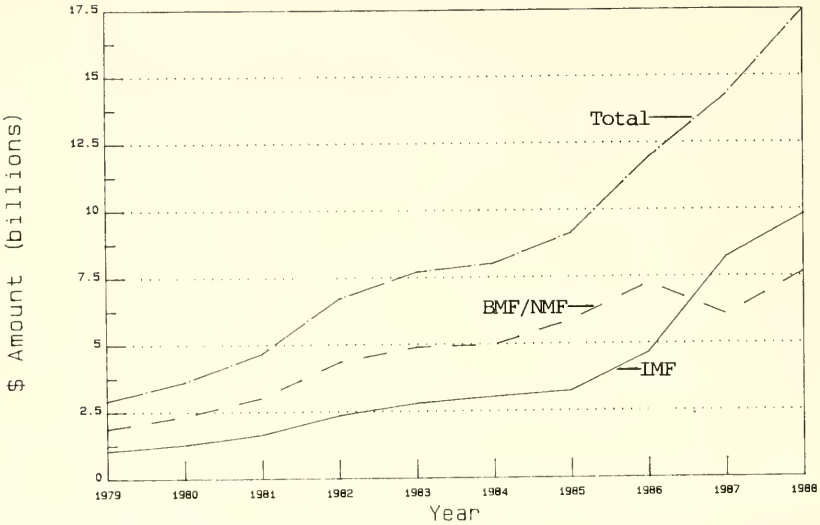
NOTE: The 'bump' in the IMF & Total trend lines for 1986 reflects the initial impact from raising the deferral level in late FY 85.

The "deferral levels" (dollar thresholds) were increased in late FY 1985. This helps to explain the sharp "bump" in the FY 1986 Individual Master File (IMF) dollar inventory trend in Figure 3. This IMF pattern, in turn, effects the trend line for the total. The once-a-year filing requirement for individual returns also contributes to this sharp "seasonal bump" in 1986. In contrast, the Business Master File (BMF) deferred accounts trend line appears much smoother, since it includes many business returns filed quarterly.

Taxpayer Delinquent Accounts

The growth in the dollar inventory of taxpayer delinquent accounts (TDAs) is more noteworthy (see Figure 4). From 1979 to end of FY 1988, the total dollar amount in TDA inventory has risen nearly 500 percent (i.e., from roughly $2.9 billion to about $17.5 billion, respectively) [5]. This sharp growth in absolute TDA dollar inventory is particularly troublesome to IRS management. In terms of relative percentages, total TDA dollar inventory has gone from around 0.8 percent of Federal receipts (lagged two years) in 1979, to about 2.3 percent in 1988.

Figure 4. Dollar Amount in TDA Inventory
IMF, BMF/NMF and Total



NOTE: Sharp jump in IMF and drop in BMF/NMF for 1987 on reflect a report definition change (see narrative).

Impact of 100 Percent Penalty Assessments on ARDI Data

One important caveat that affects several of the trend lines presented in this article (particularly Figure 4) is the treatment of "100 percent penalty assessments." In general, these assessments typically relate to Form 941 (i.e., BMF) "trust fund" delinquencies; wherein the responsible corporate official(s) has failed to deposit the taxes withheld from the employees' wages; and where the business subsequently went bankrupt.

In certain of these situations, the IRS will make an assessment(s) against the corporate official(s)--as an individual(s)--responsible for failing to deposit those Form 941 taxes. In effect, the 100 percent penalty results in multiple assessments for the same balance due (though the IRS will never collect more than the original trust fund liabilities). These assessments also tend to involve substantial sums of money. For example, at the end of FY 1988, about $2.5 billion of the $17.5 billion in total TDA dollar inventory reflected 100 percent penalty cases. Thus, this enforcement procedure can inflate many of the accounts receivable dollar inventory components--depending upon how the ARDI data are reported.

In past years, these 100 percent penalty cases were reported under "Nonmaster File" (NMF) accounts. However, in 1987, these assessments were moved over to the Individual Master File (IMF), since they reflect assessments against individuals. This operational change greatly facilitates program administration. However, it also

has a major impact on reported ARDI data. As can be seen in Figure 4, moving 100 percent penalty cases from NMF to IMF results in a marked jump in the IMF trend line (and a corresponding drop in the BMF/NMF time series) starting in 1987. Similar effects from this operational/reporting change occur in the currently-not-collectible and statute expired time series data, as is noted below.

Resources and Workload Management System

Recent inventory data on the Resources and Workload Management System (RWMS) are generally in line with the results summarized in the 1987 Document 6011 article. Some comparisons are presented in Table 2 below. In short, the RWMS queue continues to hold back a sizable percentage of potential revenue officer workload but only a small proportion of the outstanding TDA amount.

As of December 1988, the queue contained 49.7 percent of the potential revenue officer entity (taxpayer) case work. Of those delinquencies with established dollar assessments (i.e., those with at least one TDA), the RWMS queue contained 33.8 percent of the cases, but only 6.5 percent of the outstanding TDA dollar liabilities. In 1986, these respective percentages were about twelve percent of the cases versus two percent of the dollar amount.

In terms of the average TDA amount (per taxpayer case with at least one TDA), this figure for the RWMS queue continues to be substantially smaller than the corresponding average for active cases currently in the Collection Field Function (CFF). Based on the December 1988 inventory data, the average TDA amount for a case in the queue was about $5,000 compared to $36,655 per case in the CFF. These respective averages were $3,900 and $26,200--for 1986.

These data indicate that the RWMS queue is not a major factor contributing to the growth in TDA **dollar** inventories. Between December 1986 and December 1988, the TDA amount in queue inventory rose approximately $770 million. In contrast, the total TDA inventory amount (i.e., the sum of the queue, the CFF and the Automated Collection System) increased by over $5.5 billion. However, the RWMS may be contributing to the growth in the **number of cases** in TDA inventory, since previous research has indicated a lower disposition rate under the RWMS case priority features [6].

Another interesting dimension of the RWMS revealed in Table 2 is the effect of its prioritization scheme on the types of cases reaching the revenue officer workforce. In a manner of speaking, taxpayer cases involving only TDAs, or both TDAs and taxpayer delinquency investigations (TDIs), are much more likely to reach the revenue officer workforce first (67.0 percent and 64.2 percent, respectively), compared to "TDI-only" cases (23.5 percent). In other words, based on the December 1988 inventory figures on potential CFF workload, a case with at least one associated TDA had more than twice the probability of being assigned to a revenue officer, than did a taxpayer delinquency involving only a TDI(s).

Table 2. Selected Comparisons of Cases in the RWMS Queue Versus the Collection Field Function (CFF) (Inventory as of December 1986 versus December 1988)

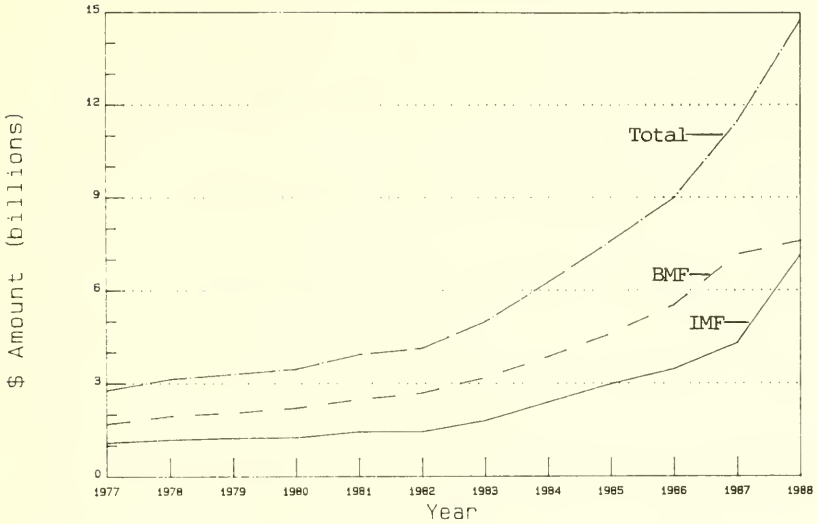
Location of Case	(1) Percent of Total Taxpayer Cases		(2) Percent of Taxpayer Cases with at Least one TDA		(3) Percent of Total TDA Assessed Dollar Amounts	
	1986	1988	1986	1988	1986	1988
Queue	23.1%	49.7%	12.2%	33.8%	2.0%	6.5%
CFF	76.9	50.3	87.8	66.2	98.0	93.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
	('86 N = 701,112)		('86 N = 494,403)		('86 N = $11.6 bil.)	
	('88 N = 907,133)		('88 N = 588,775)		('88 N = $15.3 bil.)	

Location of Case	(4) Percent of Taxpayer Cases with only TDA(s)		(5) Percent of Taxpayer Cases with Combined TDA(s) & TDI(s)		(6) Percent of Taxpayer Cases with only TDI(s)	
	1986	1988	1986	1988	1986	1988
Queue	12.8%	33.0%	9.9%	35.8%	49.4%	76.5%
CFF	87.2	67.0	90.1	64.2	50.6	23.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
	('86 N = 389,328)		('86 N = 105,075)		('86 N = 206,709)	
	('88 N = 418,156)		('88 N = 170,619)		('88 N = 348,795)	

Currently-Not-Collectible Accounts

Similar to the trends in TDA inventory, the assessed dollar amounts in currently-not-collectible (CNC) inventory also continue to rise. Figure 5 presents the trends in CNC dollar inventories for FY 1977 through 1988 [7]. The total amount in CNC inventory has risen from approximately $2.6 billion to nearly $14.8 billion during this period. Again, part of this growth likely reflects the subsequent effects of the increases in overall tax liabilities.

Figure 5. Dollar Amount in CNC Inventory
IMF, BMF and Total



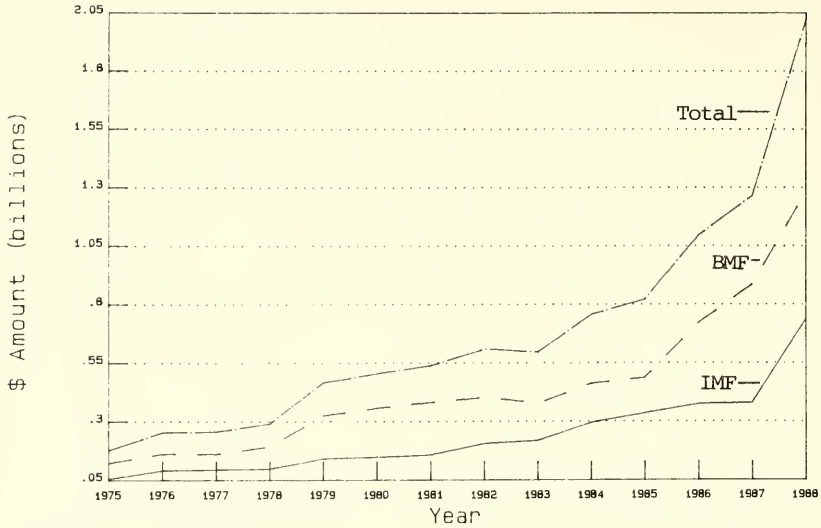
NOTE: The sharp jump in the IMF and Total trend lines in 1988 reflects a report definition change (see narretive).

As is apparent in Figure 5, growth in CNC dollar inventory has been particularly proncunced during the latter portion of the 1980's. However, the marked "jump" in the IMF trend line from 1987 to 1988 is mainly attributable to a change in IRS reporting procedures--relative to the 100 percent penalty assessments (see above). Prior to FY 1988, 100 percent penalty assessments were not captured on the routine master-file-based CNC reports, since they were "NMF" accounts (i.e., not present on the IMF or BMF). However, due to the recent operational change which placed 100 percent penalty cases on the IMF, its trend line now reflects these assessments, hence, the sharp rise in 1988. The IMF data for 1988, in turn, affect the total CNC trend line.

Statute Expired Accounts

The last factor considered in this article is the dollar amounts reaching statute expiration. Figure 6 shows the time series data on statute expired amounts [8]. As in the inventory trends discussed above, growth is also occurring in this area. Between 1975 and 1987, the total dollar amount reported as statute expired rose from around $0.2 billion to about $1.3 billion. For 1988, the statute expired amount was over $2.0 billion. However, as with the CNC amounts, the IMF (and thereby total) statute expired figure for 1988 was impacted by the inclusion (introduction) of 100 percent penalty assessments in the individual portion.

Figure 6. Statute Expired Amounts
IMF, BMF and Total



NOTE: 1985 IMF figure was interpolated. Sharp increase for IMF & Total in 1988 reflects report definition change (see narrative).

The absolute size of the money amounts reaching statute expiration is certainly large. However, some comparative percentages help provide a better perspective on the relative significance of these figures. Table 3 presents the statute expired amounts as a percentage of total Federal receipts (lagged six years), and as a percentage of grand total ARDI (lagged five years). Again, these particular lags were used to approximate a match on tax periods.

Table 3 shows that statute expired amounts as a percentage of total Federal receipts are extremely small and have not varied much in recent years--hovering around 0.2 percent for 1982 through 1987. The jump to 0.33 percent for 1988 primarily reflects the report definition change relative to 100 percent penalty assessments. In contrast, statute expired amounts as a percentage of grand total accounts receivable have tended to vary more during the 1982 through 1987 period, but with no clear trend. Overall, these results tend to suggest that, to date, only a relatively small proportion of ARDI has reached statute expiration.

This is not to say that the Service need not be concerned about the growth in statute expired amounts simply because they appear to be a small proportion of receipts or ARDI. For one, these percentages essentially relate to the outcome of amounts which originated five and six years ago. They reveal little about whether a higher proportion of **current** receipts/ARDI will reach statute expiration five or six years hence. In addition, although useful, these percentage computations (as well as those offered earlier)

necessarily involve large aggregate figures and somewhat simplistic "lag" assumptions. Thus, they are rough approximations which could mask more troublesome relationships and/or trends.

Table 3. Statute Expired Amounts as a Percent of Total Federal Receipts (Lag 6 years) and Grand Total ARDI (Lag 5 years)

Year	Statute Expired Amount as a Percent of Receipts	Statute Expired Amount as a Percent of ARDI
1982	0.20%	7.30%
1983	0.17	6.11
1984	0.19	5.70
1985	0.18	5.21
1986	0.21	5.97
1987	0.21	4.99
1988	0.33	8.37

Conclusion

The time series data presented above clearly show upward trends in the absolute dollar amounts in accounts receivable inventory. Growth patterns are apparent, whether one considers the grand total ARDI or selected Collection program areas such as deferred accounts, TDAs, CNC accounts, or statute expired accounts. These trends are likely to continue for the foreseeable future, mirroring, to some extent, the continuing growth in the overall U.S. economy and the ever larger revenue base it generates.

In addition, although the absolute dollar amounts in accounts receivable inventory are rising sharply, some comparative percentages suggest a less alarming situation. The Service continues to address this area of concern. Nonetheless, some increase in ARDI (at least in absolute terms) seems both natural and inevitable as the economy continues to grow.

Notes and References

1. The data on deferred accounts; taxpayer delinquent accounts; currently-not-collectible accounts; statute expired accounts; and the Resources and Workload Management System were compiled from various management information reports maintained by the Office of the Assistant Commissioner (Collection), the Office of Evaluation and Research. In some instances, these data may differ slightly from information compiled by other IRS functions.

   For related Collection articles previously published in, **Trend Analyses and Related Statistics, IRS Document 6011**, see:

   - Document 6011 (revised 3-86), pp. 57-71, relative to deferred accounts;
   - Document 6011 (revised 2-85), pp. 61-69 and Document 6011 (revised 5-88), pp. 67-80, relative to taxpayer delinquent accounts;
   - Document 6011 (revised 3-87), pp. 71-79, relative to currently-not-collectible accounts;
   - Document 6011 (revised 3-86), pp. 73-83, relative to statute expired cases; and
   - Document 6011 (revised 3-87), pp. 51-62, relative to the Resources and Workload Management System.

2. **Historical Tables, Budget of the United States Government, Fiscal Year 1990,** pp. 24-25.

3. Accounts receivable data reflect "Schedule 9," **Report of Accounts and Loans Receivable Due From the Public,** figures as cited in other IRS documentation.

4. **Accounts Receivable Briefing, 02/10/89, Internal Revenue Service,** Part II. A/R Efforts, briefing material supplied by staff from the Office of the Assistant Commissioner (Collection).

5. IMF versus BMF/NMF split for fiscal year 1979 was estimated based on the 1979 calendar year ratio.

6. **Document 6011 (revised 3-87),** pp. 56-57.

7. IMF versus BMF splits for fiscal years 1977 and 1978 were estimated based on the 1977 and 1978 calendar year ratios.

8. Data for 1975 through 1984 reflect calendar year figures. The IMF figure for fiscal year 1985 was estimated as the midpoint between the CY 1984 and FY 1986 due to report problems. Total figure for FY 1985 equals estimated IMF plus reported BMF.

Trends in the Filing of Withholding and Information Documents

by
Marion W. Mak
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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Trends in the filing of withholding and information return documents have gone through many changes since filing requirements were first imposed during the time of the American Civil War. Most of these changes are attributable to major acts of legislation enacted throughout the years that brought about increased filings through the introduction of new forms and through the expansion of existing filing requirements. These documents are used in an Internal Revenue Service program that matches interest, dividend, and certain other income shown on the withholding or information document with similar information shown on the taxpayer's individual income tax return to determine underreporting or nonreporting of income and nonfiling of tax returns. New programs currently under study may vastly enlarge the matching process by extending the coverage to include all corporate recipients.

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Introduction

Each year, the Internal Revenue Service (IRS) receives approximately five times as many withholding and information documents as regular tax forms (such as the Forms 1040, 1120, 941, etc.). In filing year 1987, nearly one billion information and withholding documents were received, compared to approximately 200 million regular tax forms. These information documents serve as the basis for one of the Service's most important and successful compliance enforcement programs, namely, the Information Returns Program (IRP). The purpose of IRP is to match the income reported by business payers against similar income reported by taxpayers on their individual income tax returns. This matching process allows the IRS to use computers to screen the entire universe of individual income tax returns filed for unreported income and to identify individuals who failed to file a required income tax return.

Unless otherwise specified, all data on information and withholding documents in this article are expressed in terms of calendar year of receipt ("filing year") reflecting payments made in the previous tax year. For example, 1987 receipts reflect payments made in tax year 1986. Also, this article focuses on the filing trends for these documents rather than on the enforcement aspects. A comprehensive discussion of the enforcement aspects of the information documents program can be found in two articles appearing in the 1987 edition of Trend Analyses and Related Statistics (Document 6011 Rev. 3-87): (1) "Trends in IRP Underreporter Cases" by David Hill and Fred J. Riley; and (2) "Trends in Individual Nonfilers" by Gary Elsner and Marion W. Mak.

Early Development of the Withholding and Information Reporting System

The withholding system existed as early as the Civil War period when the Revenue Act of 1862 provided for the withholding of income at source. The Act imposed a three percent withholding on salaries paid to all persons serving in the civil and military services of the United States. The three percent withholding was also applied to interest and dividends paid by banks, railroads, insurance companies, etc.

During World War I, the Revenue Act of 1917 virtually abandoned withholding through the repeal of most of the existing withholding provisions. In their place, the Act provided for an "information at source" requirement that mandated information reporting by corporations, employers, and other businesses making payments of any fixed or determinable gains, profits, and income of $800 or more. It was believed that such a move would mitigate the growing compliance problem and simplify the administrative processes resulting from an enormous increase in individual tax returns.

In the 1930's, the withholding system was reactivated through the enactment of the Social Security Act of 1935 and the Railroad Retirement Act of 1937. In order to insure the proper collection of social security taxes, business employers were required to withhold these taxes from the wages of their employees. Similarly, the Railroad Retirement Act also required employers to withhold taxes from compensation received by railroad employees. These acts instituted withholding on a large scale basis for the first time.

During World War II, a major step toward achieving the self-assessment system we know today was taken with the enactment of the Current Tax Payment Act in 1943. This act required individual taxpayers to prepay their taxes through the withholding of their wages. Congress felt it was advisable to adopt this pay-as-you-go system because of the high tax rates effective during World War II. Individuals could prepay their taxes in two ways: either through the withholding system (for individuals with earned income), or through the declaration of estimated tax system (for individuals with unearned income).

Another important step in the withholding program was reached when Congress legislated the Combined Old-Age, Survivors, and Disability Insurance-Income Tax Reporting Amendments of 1975. This law directed the IRS and the Social Security Administration to create and implement an annual wage reporting system, the Combined Annual Wage Reporting (CAWR), to reduce the reporting burden on taxpayers. Under this program, all Form W-2 withholding documents were filed directly with the Social Security Administration where they were transcribed onto magnetic media, processed, and then forwarded to the Internal Revenue Service for further processing.

Development of Information Reporting in the 1960's and 1970's

As indicated earlier, the requirement for information returns reporting was initiated under the "information at source" provision of the Revenue Act of 1917. Business payers of income were required to report to the IRS payments of certain income made to individual recipients. In the early years, very little was done in the matching of

information returns. IRS did attempt to match the incoming information documents with the related information shown on the taxpayer's income tax return by using selected letters of the alphabet. But these efforts were conducted on a limited scale.

By the early 1960's, Congress recognized that underreporting of interest and dividend income continued to be a serious problem. In 1961, Public Law 87-397 was enacted requiring taxpayers to provide the Internal Revenue Service and payers of income with a taxpayer identification number (TIN). For individuals, the TIN was basically the taxpayer's social security number (SSN). This law was instrumental in speeding up the IRS matching process through the use of the taxpayers' identification numbers.

The Revenue Act of 1962 substantially expanded the information returns reporting requirements for interest and dividend income. This act lowered the filing threshold from $600 to $10 for payers of dividend, interest, and patronage dividend income. The act also required business payers to furnish copies of the information returns to the taxpayers receiving interest and dividend income.

The 1962 Act mandated the establishment of an individual information document matching process that subsequently evolved into the current highly successful Information Returns Program (IRP). Even with the enactment of Public Law 87-397 and the Revenue Act of 1962, early attempts to match these returns were severely hampered because of the difficulty and cost of using paper documents. It was not until the mid-1970's, when IRS began to computerize the matching process and to encourage taxpayers to file on computer processible magnetic media, that the IRP program took on new momentum.

Paper Documents vs. Magnetic Media

In 1965, approximately 340 million information and withholding documents were received by the IRS from business institutions reporting payments of interest, dividends, wages, etc. Limited use was made of these documents due to their sheer volume and to the time required to manually match the information shown on these documents with the information shown on the taxpayers' individual income tax returns. A number of research projects were initiated to address some of the difficulties encountered in the matching process, such as, no social security number, multiple persons with the same social security number, etc.

In 1966, a pilot study testing the use of information documents furnished on magnetic tape, in lieu of paper documents, proved highly successful. Under this study, a small number of payers submitted 1964 Forms W-2 and 1099 documents on magnetic tape for testing purposes. The test results proved that such information reporting was both practical and cost-effective for the Service. As a consequence, an operational, tape-reporting program was established beginning in 1965. Approximately 18 million Forms W-2, 1099 and 1087 (filed by nominees) were reported on magnetic tape by business payers under this program. With the subsequent expansion of computer capabilities, the burden of matching these documents was vastly reduced. Table 1 presents a historical view of the total number of documents that were filed via magnetic media during fiscal years 1966-1972.

Table 1. Information Returns Reported on Magnetic Media
(thousands)

Fiscal Year	Documents Received
1966	26,248
1967	36,492
1968	47,686
1969	58,951
1970	68,300
1971	91,449
1972	115,008

Source: Annual Report of the Commissioner of Internal Revenue

Actual reporting of paper and magnetic tape documents by the various types of documents filed began in the mid-1970's when the IRP program was fully operational. Table 2 shows the actual number of these various documents filed during the 1976 to 1987 calendar years of receipt for the summary total, as well as for paper and magnetic tape. Figure 1 depicts the proportion of documents submitted via magnetic media versus those submitted on paper. Figure 2 displays the annual percentage change in the volume of the paper and magnetic tape submissions.

As is seen in Figure 2, a sharp increase in magnetic tape reporting occurred in 1979. This sharp increase of approximately 60 percent was attributed mainly to the direct filing of withholding documents with the Social Security Administration. After the documents were processed by the Social Security Administration, they were forwarded via magnetic tape to the Internal Revenue Service for further processing.

The fairly large increase in magnetic tape reporting of over 20 percent for 1985 was the the direct result of the Interest and Dividend Compliance Act of 1983. This Act required payers transmitting 50 documents or more to file on magnetic tape. With the rapid advancement of computer technology among the fast growing American industries, an increasing number of businesses have the capability of reporting information documents via magnetic media. It is probable that future legislation will mandate that more documents be filed via magnetic media because of the time savings and cost-effective results. However, it is unlikely that tape reporting will ever reach 100 percent, since there will always be some small businesses that do not have the financial means to computerize their reporting processes. This is reflected in Figure 1 which shows that the percentage of tape reporting has remained quite constant since 1979.

The approximately 30 percent increase in paper documents in 1984 (shown in Figure 2) was due mainly to the reporting of the Individual Retirement Account (IRA) contributions mandated by the Economic Recovery

Table 2. Number of Withholding and Information Returns (Thousands of Returns)

Form	Description	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
		Filing Year											
		A. Summary											
	Total	471,579	481,161	504,146	517,100	563,587	588,157	623,640	633,644	694,616	803,006	900,207	913,556
W-2	Wage and tax statement	173,258	168,501	171,363	164,714	175,328	164,205	170,159	152,296	165,073	173,170	185,461	185,980
W-2P	Annuities, pensions, retired pay, or IRA payments	9,205	9,774	11,671	10,351	13,027	12,784	13,695	19,117	17,595	19,898	22,627	24,119
W-2G	Certain gambling winnings	–	–	287	379	390	435	457	494	727	901	882	1,063
1099DIV	Dividends	70,434	69,174	69,887	72,773	73,040	75,330	80,934	84,311	82,343	90,484	89,479	90,586
1099INT	Interest income	180,430	199,963	213,804	229,008	249,578	276,498	294,125	297,222	296,258	318,362	316,849	309,377
1099MISC	Miscellaneous income	18,671	16,642	18,849	20,857	22,392	23,543	26,420	31,272	38,745	54,721	59,421	60,008
1099OID	Original issue discount	3,183	1,345	1,544	1,536	1,392	1,599	1,968	2,061	2,095	2,717	3,354	3,282
1099PATR	Taxable distributions received from cooperatives	3,238	3,135	3,080	2,886	2,625	2,943	2,793	2,426	2,048	1,950	1,635	1,553
1099R	Total distributions from profit-sharing, retirement plans, Individual Retirement Accounts, etc.	1,556	2,205	2,565	2,656	3,178	3,613	3,987	4,533	6,048	8,892	10,028	11,837
1099B	Proceeds from broker and barter exchange	–	–	–	–	–	–	–	–	10,276	54,314	39,656	52,553
1099G	Certain Government payments	–	–	–	–	10,535	14,469	13,447	15,257	35,753	39,274	40,319	42,530
1099ASC	All Savers Certificate	–	–	–	–	–	–	1,620	7,212	3,575	80	–	–
AG SUB	Agricultural subsidy	777	730	1,498	1,537	1,143	867	1,370	2,501	–	–	–	–
5498	Individual Retirement Account	1,620	295	39	–	–	–	–	–	17,978	21,026	31,187	25,650
1099A	Acquisition or abandonment of secured property	–	–	–	–	–	–	–	–	–	–	300	364
1098	Mortgage interest statement	–	–	–	–	–	–	–	–	–	–	39,724	46,569
1099SSA/ RRB	Social security and railroad retirement benefits	–	–	–	–	–	–	–	–	–	–	41,000	40,993
K-1	Shareholder's, partner's or beneficiary's share of income, credits and deductions	8,793	9,005	9,004	9,800	10,200	11,078	11,835	14,119	15,334	16,535	17,579	16,120
Various	Foreign information returns	414	392	555	603	759	793	830	823	768	682	706	972

Table 2. Number of Withholding and Information Returns (continued)

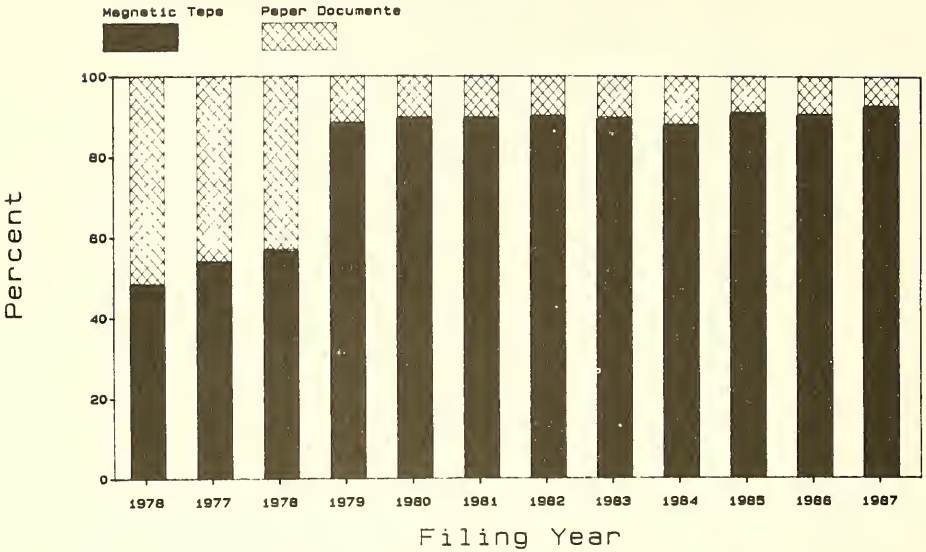
Form	Description	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
		Filing Year											
		B. Paper											
	Total	245,533	223,658	219,163	62,235	60,295	62,061	64,481	66,264	85,499	73,718	87,970	69,085
W-2	Wage and tax statement	152,231	145,589	146,826	-	-	-	-	-	-	-	-	-
W-2P	Annuities, pensions, retired pay, or IRA payments	4,308	4,298	5,231	-	-	-	-	-	-	-	-	-
W-2G	Certain gambling winnings	-	-	287	379	390	435	457	494	727	798	582	348
1099DIV	Dividends	11,110	9,992	9,755	9,398	7,915	7,158	7,255	6,711	6,055	3,370	2,629	1,814
1099INT	Interest income	53,674	45,351	36,649	31,466	30,391	31,639	31,493	29,080	30,613	13,420	7,944	5,610
1099MISC	Miscellaneous income	15,588	13,090	14,812	16,170	16,600	17,473	19,987	23,745	30,891	43,080	45,632	39,227
1099OID	Original issue discount	2,683	646	801	598	581	596	632	622	447	104	64	32
1099PATR	Taxable distributions received from cooperatives	2,846	2,354	2,541	1,964	1,674	1,800	1,497	1,193	998	737	382	165
1099R	Total distributions from profit-sharing, retirement plans, Individual Retirement Accounts, etc.	1,473	2,043	2,222	2,260	2,714	2,926	3,066	3,447	4,360	4,834	4,943	2,824
1099B	Proceeds from broker and barter exchange	-	-	-	-	-	-	-	-	729	676	394	250
1099G	Certain Government payments	-	-	-	-	30	34	26	7	217	266	168	151
1099ASC	All Savers Certificate	-	-	-	-	-	-	68	965	477	8	-	-
5498	Individual Retirement Account	1,620	295	39	-	-	-	-	-	9,985	6,425	5,163	688
1099A	Acquisition or abandonment of secured property	-	-	-	-	-	-	-	-	-	-	218	178
1098	Mortgage interest statement	-	-	-	-	-	-	-	-	-	-	2,272	1,684
K-1	Shareholder's, partner's or beneficiary's share of income, credits and deductions	-	-	-	-	-	-	-	-	-	-	17,579	16,114

Table 2. Number of Withholding and Information Returns (continued)

Form	Description	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
		Filing Year											
		C. Magnetic Tape											
	Total	216,839	248,106	275,424	444,461	492,333	514,225	546,494	552,438	593,015	712,071	811,533	843,499
W-2	Wage and tax statement	21,027	22,912	24,537	164,714	175,328	164,205	170,159	152,296	165,073	173,170	185,461	185,980
W-2P	Annuities, pensions, retired pay, or IRA payments	4,897	5,476	6,440	10,351	13,027	12,784	13,695	19,117	17,595	19,898	22,627	24,119
W-2G	Certain gambling winnings	–	–	–	–	–	–	–	–	–	103	300	715
1099DIV	Dividends	59,324	59,182	60,133	63,375	65,125	68,172	73,679	77,600	76,288	87,114	86,850	88,772
1099INT	Interest income	126,756	154,612	177,155	197,542	219,187	244,859	262,632	268,142	265,645	304,942	308,905	303,767
1099MISC	Miscellaneous income	3,083	3,552	4,037	4,686	5,792	6,070	6,433	7,527	7,854	11,641	13,789	20,781
1099OID	Original issue discount	500	699	742	938	811	1,003	1,336	1,439	1,648	2,613	3,290	3,250
1099PATR	Taxable distributions received from cooperatives	392	781	539	922	951	1,143	1,296	1,233	1,050	1,213	1,253	1,388
1099R	Total distributions from profit-sharing, retirement plans, Individual Retirement Accounts, etc.	83	162	343	396	464	687	921	1,086	1,688	4,058	5,086	9,013
1099B	Proceeds from broker and barter exchange	–	–	–	–	–	–	–	–	9,547	53,638	39,263	52,303
1099G	Certain Government payments	–	–	–	–	10,505	14,435	13,421	15,250	35,536	39,008	40,151	42,379
AG SUB	Agricultural subsidy	777	730	1,498	1,537	1,143	867	1,370	2,501	–	–	–	–
1099ASC	All Savers Certificate	–	–	–	–	–	–	1,552	6,247	3,098	72	–	–
5498	Individual Retirement Account	–	–	–	–	–	–	–	–	7,993	14,601	26,024	24,962
1099A	Acquisition or abandonment of secured property	–	–	–	–	–	–	–	–	–	–	82	186
1098	Mortgage interest statement	–	–	–	–	–	–	–	–	–	–	37,452	44,885
1099SSA/RRB	Social security and railroad retirement benefits	–	–	–	–	–	–	–	–	–	–	41,000	40,993
K-1	Shareholder's, partner's or beneficiary's share of income, credits and deductions	–	–	–	–	–	–	–	–	–	–	–	6

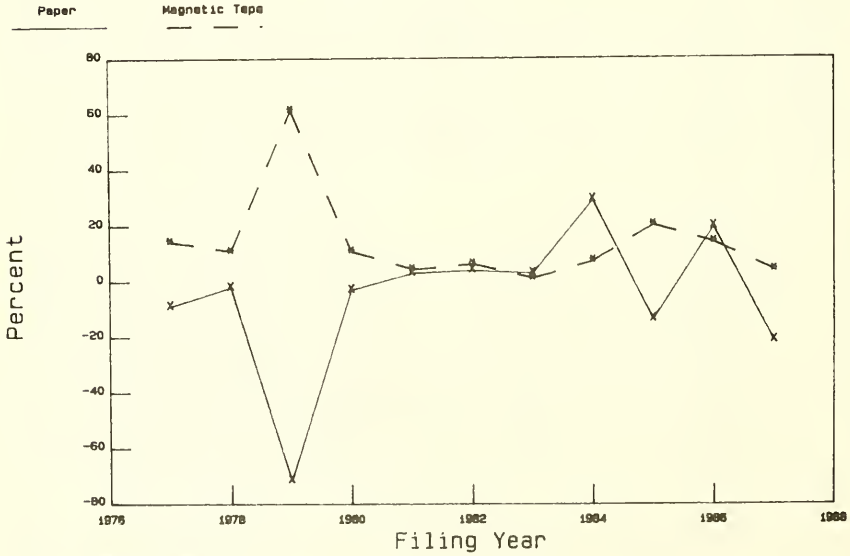
Source: Internal Revenue Service

Figure 1
Paper Documents vs.Magnetic Tape
Percent



Source: Internal Revenue Service

Figure 2
Paper vs.Magnetic Tape
Annual Percent Change



Source: Internal Revenue Service

Tax Act of 1981. Over half of the IRAs were reported on paper. The 1986 increase in paper reporting was attributed to the inclusion of Schedule K-1 reporting by shareholders, partners, and beneficiaries for the first time.

Recent Trends in Filing Information Documents

Information returns that are used in the IRP matching process serve as the official count of the number of information returns reported by the Internal Revenue Service. These numbers are shown in Table 2. Several points should be noted when looking at the consistency of the trend in these returns.

Changes in the Grouping of Returns

One significant change involved filing the old Form 1087 series by nominees. Nominees are middlepersons who receive income that belongs to other persons. They are required to file a Form 1087 showing the name of the other person as the recipient and their own name as the payer. Prior to 1984, Form 1087 was used for the reporting of interest, dividend, original issue discount, and certain miscellaneous income. Beginning in 1984, information for these types of income were reported on the related Form 1099 series.

In 1984, another change in the grouping structure occurred when certain forms became obsolete and the reporting was transferred to an existing form. Income previously reported on the Form 1099L, U.S. Information Return for Distribution in Liquidation, was reported on the existing Form 1099DIV. Income reported on the old Form 1099BCD, Statement for Recipients of Interest on Bearer Certificates of Deposit, was channeled into Form 1099INT. Likewise, income reported on the following three forms was transferred to Form 1099MISC: Form 1099NEC, Statement for Recipients of Nonemployee Compensation; Form 1099MED, Statement for Recipients of Medical and Health Care Payments; and Form 1099F, Statement for Certain Fishing Boat Crewmembers. Form 1099UC, Statement for Recipients of Unemployment Compensation, was combined with the newly created Form 1099G discussed below. The grouping of forms shown in Table 2 reflects these changes.

Impact of Recent Law Changes

The first of a series of legislative acts enacted during the 1980's that had significant impact on information reporting was the Economic Recovery Tax Act of 1981 (ERTA). Provisions in this Act were intended to increase savings and encourage investment. One of the provisions to increase savings liberalized the rules for the establishment of an Individual Retirement Account (IRA). Created by Congress in 1974, the coverage was expanded to allow virtually all workers to set up an IRA account to take advantage of the tax deferred interest and tax deductible contributions on their individual income tax returns. As a result, an additional 18 million documents were added to the total information reporting in 1984 (see Table 2).

Another provision in ERTA was the creation of the tax-free All Savers Certificate (ASC) that allowed savers to earn up to $1,000 in tax-free interest on these one-year investments. Despite the mass

publicity given to the ASC program, the taxpaying public did not respond to it with as much enthusiasm as anticipated. This provision, therefore, was allowed to expire at the end of 1982.

A major piece of legislation that impacted the information reporting program was the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA). This Act was instrumental in expanding the volume of receipts by changing the filing requirements and by introducing new reporting forms. Some of the major impacts on information returns reporting are as follows:

- Reporting on a transactional basis for certain interest income, such as savings bonds, Treasury notes and bills, and large certificates of deposits.

- Reporting by brokers on the sales and exchange of commodities and other securities as well as barter transactions on the new Form 1099B, Statement for Recipients of Proceeds from Broker and Barter Exchange Transactions. This statement was provided for each person for whom the broker had sold stocks, bonds, commodities, debt instruments, etc., or had exchanged property or services through the barter exchange.

- Reporting by sellers on direct sales to any buyers of $5,000 or more. This information was reported on the existing Form 1099MISC, Statement for Recipients of Miscellaneous Income.

- Reporting of state and local income tax refunds on the new Form 1099G, Statement for Recipients of Certain Government Payments. As mentioned earlier, information reported on the old Form 1099UC was channeled into the new Form 1099G.

- Reporting of backup withholding on certain recipients who failed to provide the Service with their taxpayer identification number. Such withholdings were reported on the related information return. For example, backup withholding on interest income was reported on Form 1099INT.

TEFRA also imposed a mandatory 10 percent withholding on such items as interest, dividends, patronage dividends, and original issue discounts. This provision, however, was repealed by the Interest and Dividend Compliance Act of 1983. In place of the withholding provision, the 1983 Act expanded and strengthened the backup withholding system. It was also instrumental in expanding magnetic tape filing, as indicated previously.

The Tax Reform Act of 1984 also impacted information reporting. This Act mandated the reporting of real estate transaction closings. Regulations issued at that time required information reporting on the existing Form 1099B for residential units only. Subsequent regulations expanded the coverage to include all residential as well as nonresidential units. The information reporting was to be provided on the newly created Form 1099S, Proceeds from Real Estate Transactions, to be filed for the first time in 1989.

The 1984 Tax Reform Act also extended the filing coverage to include new information reporting by certain lenders who had acquired interest in property that was security for a loan or who had reason to know that such property was abandoned. This information was to be reported on the new Form 1099A, Acquisition or Abandonment of Secured Property. Another new form mandated by the 1984 Act was Form 1098, Mortgage Interest Statement. Recipients of mortgage interest payments of $600 or more had to provide this form to the IRS and to the payers.

With the expansion of the filing requirements on existing forms, and the introduction of new forms through these various tax acts, the volume of information documents received since 1976 had more than doubled--from 471.6 million in 1976 to 913.6 million in 1987 (see Table 2).

Future Research Activities

As we have seen, the information document reporting program has expanded considerably through the years to provide data for the highly successful IRP matching process. In the past, the matching program had concentrated mainly on income items reported on the individual income tax form, such as interest and dividend income. Now for the first time, IRS has expanded its matching program to include expenses reported as itemized deductions on the tax form, such as mortgage interest payments. In addition, the recently enacted Technical and Miscellaneous Revenue Act of 1988, providing for the exclusion of proceeds from college savings bonds from gross income, should open up an entirely new area of information matching.

Currently, payers making interest, dividend, and certain other payments to corporations are not required to file an information document. However, millions of these documents are voluntarily filed each year by payers who report such payments to corporations. IRS has undertaken a study to determine the feasibility of establishing a business information matching program similar to the individual Information Returns Program. This study will (1) estimate the dollar losses through the failure of these corporations to report such income on their tax returns, and (2) determine the cost of processing and matching the millions of additional information documents that would be filed. If Congress should impose an information document reporting requirement on the payments to corporate recipients, it would close one of the last major gaps in the reporting of income payments.

Notes and References

1. **The American Way in Taxation: Internal Revenue, 1862-1963,** edited by Lillian Doris, Prentice Hall, 1963.

2. **Annual Report of the Commissioner of Internal Revenue,** Treasury Department.

3. **Projections of Information and Withholding Documents,** Document 6961, Internal Revenue Service, Treasury Department.

4. "Striving to Boost Savings," **Time Magazine,** April 5, 1982.

5. **Effectiveness of the Internal Revenue Service's Information Returns Program,** Committee on Government Operations, Congress of the United States, 1986.

6. **Implementation, by IRS, of a Document Matching Program for Income Paid to Business Taxpayers Should Produce Billions of Additional Dollars of Tax Revenue,** Committee on Government Operations, Congress of the United States, 1988.

7. **IRP Book,** Internal Revenue Service, Treasury Department.

A Review of IRS Research Conferences

by
Joseph R. Weikel
Taxpayer Service Division
Office of the Assistant Commissioner
(Taxpayer Service and Returns Processing)
and
Evan Soffer
Research Division
Office of the Assistant Commissioner
(Planning, Finance and Research)

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Since November 1983, six annual research conferences have been sponsored by the Internal Revenue Service. Central themes that have been addressed by these research conferences include: tax compliance, taxpayer attitudes and perceptions, and tax administration strategies. The conferences have been used by the IRS as a vehicle to disseminate results of tax administration research performed by academic institutions and other private and public sector organizations.

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Introduction

During recent years, the Internal Revenue Service has become much more open about providing information to the public on tax compliance and tax administration issues. For example, information about the tax gap (including its composition) was at one time restricted internally within the Service. The small amount of information on the tax gap that was available to the public was derived from assumptions made by sources external to the IRS. From the mid-1970's onward, considerable media attention was focused on large amounts of unreported taxes attributed to the "underground economy." These often exaggerated estimates were derived from data held in the public domain. In 1979, the Service's estimate of unreported income was initially made public, and estimates have been updated and published several times since that year. The existence of and growth in the tax gap is now an important public policy issue, and the most definitive estimates of the tax gap that are available to the public have come from the IRS.

In a similar vein, research on the causes of noncompliance with income tax laws received little support from the IRS through the late 1970's. During a March 1983 conference sponsored by the American Bar Association's Section on Taxation, it was recognized that far too little was known about causes of and solutions to income tax noncompliance. In November 1983, the IRS broadened its efforts to overcome this lack of information on income tax noncompliance by sponsoring the first of a series of annual conferences to encourage research on tax administration issues by academic institutions and other private and public sector organizations. One of the long range goals of these annual conferences has been to develop an information network between these research organizations and the IRS, in an attempt to improve tax administration research.

Conference Process

Once a topic has been chosen for an IRS research conference, appropriate academic researchers, tax practitioners, and Federal and state tax officials are contacted to establish guidelines for conference papers. Research papers addressing the conference topic are written and distributed to participants in advance of a conference. During a conference, the results of the research papers are presented by their respective authors and discussed by a panel of experts. Reports summarizing conference proceedings, including research findings and recommendations, are published several months after the conference and are distributed to participants and other researchers that are interested in tax administration. (The 1987 and 1988 conferences were also videotaped.) A list of these reports is presented at the end of this article. All conferences to date have been held in the IRS headquarters auditorium in Washington, DC.

November 1983 Conference on Tax Administration Research Strategies

Participants in the first IRS research conference consisted of individuals with strong backgrounds in statistics, mathematics, and economic modeling. These experts made the following suggestions for improving research in tax administration: 1) develop a more structured tax compliance research agenda, 2) improve data gathering methodologies, and 3) form an IRS academic liaison.

This conference led to the establishment of a panel of experts by the National Academy of Sciences to advise the Service on tax compliance research. Another development emerging from this conference was the 1984 Taxpayer Opinion Survey. This survey focused on the perceptions, underlying attitudes, and experiences of taxpayers regarding their compliance/noncompliance with the tax laws. A third outcome of the 1983 conference was the 1986 Survey of Tax Practitioners. The purpose of this study was to gain a better understanding of how tax practitioners' perceptions, attitudes, and behavior impact taxpayer compliance.

January 1985 Conference on Tax Administration Research

The second IRS research conference focused on the behavioral aspects of taxpayer noncompliance. A majority of the conference participants had backgrounds in the social and behavioral sciences as well as communications and adult functional literacy. Considerable time was devoted by the major IRS functions toward giving the conference participants an overview of IRS operations that have either direct or indirect contact with taxpayers. This background information was used as a framework for discussing factors that affect voluntary compliance.

The results of the 1984 Public Opinion Survey by Yankelovich, Skelly, and White were presented and discussed at the conference. This survey explored several substantive issues relating to taxpayer behavior, including factors that contribute to noncompliance, the incidence and character of noncompliance, the demographic characteristics of noncompliant taxpayers, and attitudinal trends that may affect voluntary compliance. Results of a taxpayer opinion survey conducted by the Roper Organization were also presented at the conference. The findings of

this survey suggest that the IRS operates in an unfavorable climate of public opinion because people do not like having their money "taken away" from them in the form of taxes, particularly what many people (rightly or wrongly) perceive to be an unfair amount of taxes.

November 1985 Conference on Trends Impacting Tax Administration

The "Research Conference on Trends Impacting Tax Administration" was the Service's third research conference, but it was the first conference to look beyond the causes of compliance and noncompliance with the tax laws. Instead, this conference focused on the broad external economic, demographic, and technological forces that will impact tax administration in the future.

The major technological trends that were identified during the conference included: increases in ADP storage capacity, expanded use of fourth-generation languages, the role of expert systems, and resistance to technological change. Key demographic trends discussed during the conference included: the changing work force age profile, women in the workplace, the aging U.S. population, and immigration. The major trends identified during the conference sessions on economic issues included: growth in worldwide economic interdependence; favorable/unfavorable effects of a strong U.S. dollar; growth in barter, countertrade, and offset; and the rise of the newly industrialized countries.

November 1986 Federal-State Research Conference

The "Federal-State Research Conference" was designed to build stronger relationships between the IRS and state tax agencies through the mutual exchange of tax administration research results. Conference participants focused on three broad themes: taxpayer compliance; management and technology; and public attitudes and perceptions. Representatives from 25 states, the District of Columbia, and three foreign governments participated in the conference.

As a result of this conference, IRS researchers have worked with state tax administration agencies to establish new programs, develop new studies, and satisfy data/information requests. Another outcome of this conference has been the sharing of IRS research through the distribution of the Service's annual research publication, "Trend Analyses and Related Statistics" (Document 6011) to all of the state tax agencies.

November 1987 Conference on The Role of Practitioners in the Tax System

The central theme that prevailed throughout the research conference on "The Role of Tax Practitioners in the Tax System" was how the Internal Revenue Service and the tax practitioner community can work together for the benefit of the taxpaying public. A key presentation at the conference focused on a nationwide survey of 1,772 tax practitioners. As noted above, the purpose of this study was to gain a better understanding of how tax practitioners' perceptions, attitudes, and behavior impact taxpayer compliance.

As a result of both the practitioner survey and the 1987 conference, the IRS established the Practitioners' Survey Working Group. This group is headed by Phillip Sullivan, IRS District Director,

Birmingham. The working group has made several recommendations to improve relations with tax practitioners. These recommendations include such things as "hot lines" dedicated to practitioners, the establishment of a focal point for practitioner affairs, offering increased participation in practitioner continuing professional education (CPE) seminars, and enhancing National Office support for district practitioner newsletters. These ideas were shared with the Commissioner's Advisory Group in August of 1988 and are currently being implemented.

November 1988 Conference on Change and Complexity as Barriers to Taxpayer Compliance

The sixth research conference, "Change and Complexity as Barriers to Taxpayer Compliance," expanded on the theme of ambiguity in and compliance with the tax laws, which was initially discussed at the 1987 conference. A central topic of this conference was the compliance impact of changes in the tax laws--particularly when the changes tend to increase the complexity (or perceived complexity) of the laws.

A major concern of the IRS which emerged at this conference was whether tax laws have become too complex for people to understand, and whether or not comprehension of the tax laws could be improved without changing the laws' intent. In addition, IRS forms and instructions were evaluated at the conference for clarity, structure, format, and ease of comprehension. A third area of discussion at this conference focused on the risks, costs, and rewards associated with compliance/noncompliance with the tax laws. This is a topic of special interest to a panel of experts on compliance research sponsored by the National Academy of Sciences.

Although not all of the issues and concerns raised at the conference were resolved, one innovation was established--a computerized networking association was set up to allow researchers who attended the 1988 conference to continue to communicate with each other. This computerized information network will help foster tax administration research as well as prevent duplicative research efforts.

Conclusion

Some people may be surprised that the IRS sponsors this type of conference and some may question the overall value of these research conferences to the Service, yet the large tax gap and efforts to control the large budget deficits of the 1980's has continually focused attention on tax administration as a means of generating revenues and helping control the deficits. As public policy focuses more and more on these as well as the traditional questions of public finance, the sponsoring of research and the sharing of information through these conferences are seen as valuable goals to be pursued by the Service. The real concern is not whether to continue the conferences, but how to improve their efficiency and impact.

Conference Publications

1. Conference on Tax Administration Research Strategies, November 1983 Volume I (Summary) and Volume II (Proceedings).

2. Conference on Tax Administration Research, January 1985, Volume I (Summary) and Volume II (Proceedings).

3. Research Conference on Trends Impacting Tax Administration, November 1985, Volume I (Summary) and Volume II (Proceedings).

4. Federal-State Research Conference, November 1986, Volume I (Summary).

*5. The Role of Tax Practitioners In The Tax System, November 1987, Conference Report.

*6. Change and Complexity as Barriers To Taxpayer Compliance, November 1988, Conference Report.

* These conferences were also videotaped.

SECTION III

Research Abstracts

Planning, Finance and Research

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Dracy, Robert and Levins, Beverly

"Identifying Returns Having a High Potential of Subsequent Retrieval," October 1988. Statistical Methods Group PFR:R and Office of Input Processing ISD:I

Criteria Existed For Identifying Some IMF Returns That Would Later Be Requested From The Files

The purpose of this study was to determine if criteria existed for identifying IMF returns that would later be requested from the files. If these returns could be identified before going into the files, they could be laser-imaged. These images could later be viewed on a computer screen, thus eliminating the need for subsequent retrieval of the paper returns.

The study found that the Statistics of Income Division, the Research Division, and the Examination Division had criteria for identifying returns with a high potential for subsequent retrieval. However, the Adjustments and Underreporter Branches of the Returns Processing and Accounting Division, both large requesters of returns from the files, had no existing criteria for identifying such returns. The study recommends that, in those organizations where criteria exist, returns meeting these criteria be laser-imaged. The study also suggests that the Office of Input Processing conduct a study to determine if criteria could be developed, using DIF techniques, for returns requested by the Adjustments and Underreporter Branches of the Returns Processing and Accounting Division.

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Downing, Mary

"Determining Erroneous Refunds on Taxable Social Security," March 1988. Compliance Measurement Group PFR:R

IRS Erroneously Issued Refunds To Taxpayers Whose Social Security Income Was Taxable Because Of Tax Exempt Interest Income

The purpose of this study was to estimate the number of possible erroneous refunds issued because the IRS decreased the amount of tax on some 1984 returns which reported taxable social security income. This study was initiated by the Director of the Returns Processing and Accounting Division. The problem arose because some taxpayers failed to enter their tax exempt interest (TEI) amount on their returns; however they correctly used this amount when figuring their taxable social security income. The Service assumed these taxpayers had no

TEI and had overstated the amount of their taxable income. The IRS recomputed the tax and issued erroneous refunds.

The study estimated that 23,760 taxpayers received refunds that they were not entitled to. These returns would have tax increases of approximately $9 million, with an expected 92 percent of these taxpayers submitting payments with their agreements. Despite a benefit-to-cost ratio of at least 32 to 1, the Returns Processing and Accounting Division decided not to undertake a recovery program since so much time had elapsed since the returns were filed.

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Downing, Mary

"HUD Mortgage Interest Subsidies," May 1988. Compliance Measurement Group PFR:R

Changes In The Reporting Of Mortgage Interest Payments To Homeowners Has Improved Compliance And New Reporting To IRS Should Address Remaining Noncompliance

Generally, taxpayers are allowed to take an itemized deduction for their mortgage interest payments. However, homeowners who receive mortgage interest subsidies from the Department of Housing and Urban Development (HUD) are not allowed to claim tax deductions for the interest payments made on their behalf by HUD. In 1983, HUD issued regulations requiring lenders to show separately, on statements sent to homeowners, the amount of interest paid by the homeowner and the amount of the HUD interest subsidy.

The purpose of this study was to determine whether the HUD regulation materially improved compliance and to estimate the amount of noncompliance remaining. The study showed that there was some improvement in compliance from 1982 to 1984 as a result of the implementation of the HUD regulation. For example, it was estimated that approximately $1.2 million in revenue may have been saved in 1984 as a consequence of the regulation. However, the study estimated that $1.3 million in revenue was still being lost because some taxpayers continued to overstate their mortgage interest deductions. The Deficit Reduction Act of 1984 subsequently addressed this remaining noncompliance by requiring the recipients of **all** mortgage interest payments (nonsubsidized as well as subsidized) to report those payments to the IRS and to the homeowner. This information is then matched against itemized deductions for mortgage interest claimed by homeowners.

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Downing, Mary

"Kick-out Increases in Dependents Study (KIDS)," February 1988. Compliance Measurement Group PFR:R

Increases Of Five Or More Dependents Claimed From One Tax Year To The Next Were Frequently Improper And Would Result In Substantial Tax Changes If Examined

The main objective of this study was to determine whether increases in the number of exemptions claimed from one tax year to the next is a useful way to identify returns with improperly claimed exemptions. The study identified returns which showed increases of three or more dependents claimed between tax year 1982 and tax year 1983.

The results of the study indicate that if a full-scale program were initiated, approximately 110,248 returns would be identified for examination. An estimated 61 percent of these cases would have tax increases due to the disallowance of dependency exemptions. Expected revenue is estimated at $7.4 million, with a benefit-to-cost ratio of 6 to 1. The study did not recommend that a full-scale program be implemented using increases of three or more exemptions. Instead, the study suggested that more productive criteria would be increases of five or more exemptions and a head of household filing status in at least one year. These criteria would increase the benefit-to-cost ratio to almost 15 to 1.

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Downing, Mary

"Monitoring Individual Noncash Contributions," March 1988. Compliance Measurement Group PFR:R

Many Taxpayers Do Not Support Deductions For Noncash Contributions

The noncash contributions program monitors charitable deductions of property over $500 to insure that they are properly supported with Form 8283 "Noncash Charitable Contributions." Taxpayers who fail to attach Form 8283, and who do not submit one when requested to do so by Service Center Returns Processing personnel, have their noncash contribution deductions disallowed. As a result of the tax year 1985 program, 26,000 taxpayers were assessed $8.2 million in additional taxes. The program cost $318,000 for a benefit-to-cost ratio of 26 to 1.

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Downing, Mary

"Taxable Annuities and Pensions Study," July 1988. Compliance Measurement Group PFR:R

Taxpayers Who File Tax Returns Are Basically Compliant In Reporting Taxable Pensions, However Many Taxpayers With Pensions Did Not File Tax Returns

The objective of this study was to determine whether taxpayers who received pension income statements which contained only an entry for gross pension income (with no entry for taxable amount) were reporting the taxable amount of their pension on their tax returns. The results of the study indicate that those taxpayers who filed tax returns were basically compliant. However, many of these taxpayers reported their taxable pension income on the wrong line of their return (i.e., on the wage or other income line). Changes to tax return instructions have therefore been suggested to address this problem.

The tax on many other returns was not adjusted because the taxpayers claimed their pensions were nontaxable disability benefits. These statements were accepted at face value for the purpose of this study. An additional 674,000 taxpayers were identified because they had received pensions for at least three years, but failed to file tax returns. Based on this information, Collection indicated that they would revise their nonfiler criteria to include Forms W-2P with significant gross pensions--even if the forms have no entries for a taxable pension amount.

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Fadell, Alicia and McArthur, Timmie

"Effects of Nontax Refund Offsets on Taxpayer Compliance," March 1989. Modelling and Special Studies Group PFR:R

Tax Compliance Problems Result From The Refund Offset Program

As mandated by Congress, the Internal Revenue Service has implemented a Refund Offset Program to collect nontax debts, such as overdue payments on Guaranteed Student Loans and delinquent child support payments. Under this program, the IRS offsets a debtor's Federal income tax refund to fully or partially satisfy the obligation. This study was designed to monitor and analyze the filing and withholding patterns of all taxpayers who were posted on the tax year 1985 Debtor Master File for refund offset. In the analysis of the subsequent compliance behavior of the debtors included in the refund offset program, the referred cases that were offset were compared to a general refund control group. For those taxpayers experiencing refund offsets, an in-

crease in the number of balance due cases and an increase in the number of nonfiler cases were found in the year following the offset.

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Hiniker, John

"Erroneous Notice Study," Statistical Methods Group PFR:R November 1988.

Study Of Service Error In Issuing Balance Due And Refund Notices To Taxpayers

The IRS pilot-tested a new Discriminant Function (DIF) application which identifies taxpayer notices with a high likelihood of Service error. The study covered the 1987 processing year and involved a sample review of IMF math error balance due notices and IMF math error refund notices. There were approximately 4.7 million such notices issued to taxpayers in 1987.

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Iocozzia, James

"Study on Potential Underwithholding," April 1988. Modelling and Special Studies Group PFR:R

There Was Potential For Taxpayers To Be Underwithheld For TY 1987

As part of the effort to implement the 1986 Tax Reform Act, the Service tried to determine whether there were any pockets of taxpayers who were being underwithheld. Focus group interviews were conducted in Washington, D.C., Atlanta, Dallas, and San Francisco in February 1988 with the types of taxpayers most likely to be underwithheld: taxpayers with higher incomes, married taxpayers with two incomes, and dependent taxpayers with significant amounts of unearned income. The results indicate that there is evidence of pockets of underwithholding among the participants. While the representativeness of the sample is unknown, the taxpayer subpopulations selected and the focus group participants observed during testing generally represent a scenario under which taxpayers might find themselves underwithheld for 1987. Moreover, the observed population (apparently one-third) of married, two-earner, and high income participants who experienced shifts from a refund for TY 1986 to a balance due return for TY 1987 suggests that these circumstances do not represent isolated cases.

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Iocozzia, James

"Taxpayer Paperwork Burden Measurement Study," June 1988. Modelling and Special Studies Group PFR:R

IRS Improves Method For Measuring Taxpayer Burden

In keeping with the President's initiative to reduce paperwork burden, the IRS undertook a major, state-of-the-art effort to measure more accurately taxpayers' burden in complying with Federal tax requirements. The IRS teamed up with Arthur D. Little, Inc. to develop and implement an improved method for estimating paperwork burden. This joint effort involved extensive data-gathering--using focus groups, diary studies, and nationwide surveys of both individual and business taxpayers. The resulting method generates more accurate burden estimates since it allows for the measurement of burden associated with taxpayer paperwork activities other than tax return preparation (e.g, recordkeeping).

Under the new methodology, the estimate of time spent preparing tax forms for both individuals and businesses in tax year 1986 is calculated to be 1.5 million hours. This figure is roughly twice the estimate of 796 million hours generated by the old method. For tax year 1986, the time spent by individual and business taxpayers on activities other than tax return preparation (i.e., recordkeeping, obtaining advice, reading instructions, etc.) is estimated to be 3.8 million hours.

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Jones, Gerald

"Service Center Budget Model," June 1988 Modelling and Special Studies Group PFR:R

Model Will Allow The IRS To Better Justify Future Service Center Budget Submissions

A computer-based model was developed to simulate virtually all aspects of service center returns processing and better help Treasury and the IRS estimate their resource needs as part of the budget process. The model contains production and flow rates for each of the 59 service center functions, broken out by return type. It, therefore, has the capability of estimating the resources required, by function, to process any given number of returns. The Service Center Budget Model was used by the IRS and Treasury as part of the Service's fiscal year 1990 Treasury Budget Submission process.

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Kenadjian, Berdj

"Foreign Source Incomes and Foreign Information Returns Program," June 1988. Compliance Analysis Group PFR:R

Most Foreign Source Income Of U.S. Taxpayers Are Not In Forms Amenable To Effective Coverage By Information Reports

A U.S. House of Representatives Subcommittee report compared the approximately $90 billion of income that U.S. taxpayers earn abroad with the $0.5 billion foreign tax agencies report to IRS on matchable third party information documents. This study by the IRS Research Division shows why it is inappropriate to make such a comparison. In 1986, interest earned on U.S. bank loans plus receipts of income from U.S. direct investment abroad totaled approximately $70 billion. Third-party information documents are not designed for and probably cannot effectively cover much of such business incomes. Income earned on foreign assets of the U.S. government, for which no information reporting is needed, amounted to another $6 million. The $90 billion estimate also includes returns on bearer bonds and some tax haven accounts which offer owners anonymity and, therefore, protection from information reporting.

This study nevertheless recognizes that a significant amount of foreign source income can be effectively monitored with information returns. Consequently, it supports increased use of foreign information returns in international tax administration, along with other measures to improve compliance in reporting foreign source incomes.

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Szilagyi, John

"Analysis of the Effect of Dependent SSNs On the Number of Dependents Claimed for Children, Parents and Others On 1987 Tax Returns," October 1988. Compliance Measurement Group PFR:R

Dependent SSN Requirement Appears To Have Improved Compliance By Causing A Significant Decrease In The Number Of Dependents Claimed On 1987 Tax Returns

The Tax Reform Act of 1986 requires that social security numbers (SSNs) be reported for all dependents (age five or older) claimed on tax returns, starting with tax year (TY) 1987. Based on returns filed in TY 1972 through TY 1986, it was projected that 76.7 million dependents would be claimed on TY 1987 returns. However, according to data from the Taxpayer Usage Study, only 70.67 million dependents were actually claimed on these returns--a decrease of over six million dependents. This suggests that requiring dependent SSNs on tax returns has improved voluntary compliance.

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Szilagyi, John

"Payment-In-Kind (PIK) Multi-Year Monitoring System Test," February 1988. Compliance Measurement Group PFR:R

Test Reveals Adequate Taxpayer Compliance In Reporting PIK Commodity Distributions

Legislation enacted in March 1983 provided that the Federal government would make in-kind commodity payments (i.e., corn, rice, wheat, sorghum and cotton) from previous years' surpluses, instead of cash, to farmers who did not grow these crops on a portion of their land. The law provided that the commodity distributions should be reported as income in the year the farmer sold or otherwise disposed of the crops.

To track compliance with this reporting requirement, computer tapes of the more than 2 million payment-in-kind (PIK) distributions were obtained from the U.S. Department of Agriculture. This information was matched with information on farm tax returns filed for 1983 and 1984. Of the cases matched, the disposition or use of the PIK commodity did not appear to be reported in 76.7 percent of the cases.

A stratified random sample of 395 of these taxpayers was contacted. The weighted results of taxpayer responses indicate that, in 95.2 percent of the cases, taxpayers did include the disposition of the PIK commodity in their farm gross receipts or used the crop as feed, but had not answered the PIK disposition question on their tax return. In 2.5 percent of the cases, PIK distributions were not included in income, but their inclusion resulted in no tax change because of other losses or credits. In 2.3 percent of the cases there were tax increases averaging $310. Considering these relatively high compliance figures and the very short duration of the PIK program, a full-scale operational enforcement program was not implemented.

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Szilagyi, John

"Tax Year 1987 Filing Survey of IRS Employees," April 1988. Compliance Measurement Group PFR:R

Survey Of IRS Employees Finds No Dramatic Or Unexpected Shifts In Filing Patterns

A survey of 1,100 IRS employees was conducted from March 28 to April 1, 1988 to determine why taxpayers appeared to be filing their 1987 tax returns later than usual. Of those sampled employees who had already filed, 95.1 percent had refund or even returns. The remaining 4.9 percent had a balance due before remittance. A subsequent effort was made to contact, by phone, those IRS employees

originally surveyed who had not yet filed their returns. Of those contacted, 43 percent expected to receive a refund, 36 percent expected to have a balance due, and 21 percent did not know yet. These survey findings were quite similar to projections for the general population.

The most common explanation taxpayers gave for filing later was that they usually filed later (38 percent). Other explanations were: a tax balance was due (23 percent), waiting for required information (18 percent), complexities in the Tax Reform Act (5 percent), personal situations (5 percent), waiting for their return preparer (1 percent), and other miscellaneous reasons (10 percent).

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Collection

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Choi, Helen and Dracy, Robert

"A Study of Collection Workload in the Southwest Region," July 1988. Operations Research Section CO:E and Statistical Methods Group PFR:R

Collection Workload In The Southwest Region Is Not Significantly Different Than The Other IRS Regions

IRS management in the Southwest Region was concerned that economic conditions and demographic shifts in that area had caused reduced levels of voluntary compliance with tax filing and paying requirements. This study analyzed IRS data on delinquencies and Department of Commerce data for the seven IRS regions. The perceived decrease in voluntary compliance was not found to be attributable to economic or demographic trends in the Southwest.

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Friedman, Joel

"Analysis of 100 Percent Penalty Assessments," June 1988. Operations Research Section CO:E

Unpaid Corporate Withholding Taxes Assessed Against Corporate Officers Are Difficult To Collect

When corporations fail to pay over the amounts they withhold from employee salaries, the responsible corporate officials are personally assessed for the unpaid corporate liability. The average amount of these assessments made in 1986 was $21,317. When these cases were analyzed one year and three months after the assessment was made, full payment had been realized in less than 10 percent of the cases, and approximately nine percent of the amount assessed had been collected.

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Friedman, Joel

"Collection of Additional Income Taxes Assessed as a Result of an Audit," January 1989. Operations Research Section CO:E

Over 90 Percent Of Audit Assessments Are Ultimately Collected

This study tracked additional assessments made in 1982 and 1983 as a result of an audit. As of September 1988, 91 percent of these cases were closed as fully paid. Including penalties and interest, over 102 percent of the original assessed amounts had been collected as of that date.

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Friedman, Joel

"Trends in First Notices of Balance Due for Individual Income and Business Taxes," March 1988 and February 1989. Operations Research Section CO:E

The Average Amount Of A Balance Due First Notice Has Greatly Increased

For individual income taxes, the average amount of a first notice of balance due increased 74 percent between 1982 and 1986, from $666 to $1,158. For business taxes, the increase was 58 percent--from $1,492 in 1983 to $2,357 in 1987.

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Employee Plans and Exempt Organizations

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Hall, Howard

"Preprinting of Forms 5500 and 5500-C (Annual Return/Report of Employee Benefit Plan) with Plan Identifying Information," March 1988. Support and Services Branch E:O:S

Preprinting Plan-Identifying Information On The Annual Return/Report Of Employee Benefit Plans Can Reduce Taxpayers' Reporting Burden And Expedite Processing

Taxpayers and practitioners are required to provide plan-identifying information on Forms 5500 and 5500-C (Annual Return/Report of Employee Benefit Plan). The Tax Forms Coordinating Committee agreed to redesign page one of the annual return/report in order to provide this information from the Employee Plans Master File.

An estimated 40 percent of the annual return/report filers would use the preprinted form. In addition to reducing the taxpayers' paperwork burden and improving taxpayer relations, this innovation will expedite the processing of these returns and reduce the effort needed to secure bad or missing plan identification data.

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Examination

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Bunch, Allan and Soffer, Evan

The Effect of Automation Technology on Examination Personnel and Organization," May 1988. Implementation Branch EX:AES:I and Compliance Measurement Group PFR:R

Laptop Computer Phase of the Examination System (AES) Is Highly Successful

The Automated Examination System (AES) represents a multiphase effort by the Service to automate the Examination function. In order to better understand the impact of automation on the Service and to improve planning for future phases of AES, the IRS commissioned a study of AES laptop computer use by 1,700 revenue agents and group managers. Results of the survey indicate that the program has been highly successful with minimal negative impact on users. Specific areas of success include: the high proportion of revenue agents who continue to use the laptop, satisfaction with the generic word processing and spreadsheet software (Enable), improvements to the quality and appearance of revenue agent work products, satisfaction with the home use policy, management's commitment to the program, and satisfaction with training. The survey results also suggest that improvements could be made in some areas of the AES laptop phase--such as improving user-friendliness of the 1040 Workcenter customized software application.

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International

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Bennett, Charles **"Study of Employees Who Claim Exemption From Withholding Due to IRC Section 911,"** October 1988. Budget and Research Team IN:M:B

Many Employees Who Work Outside The U.S. And Claim Exemption From Employer Withholding Are Not Filing Returns

Employees who work abroad can claim that the income they receive is exempt from employer withholding (under sections 3401 and 3402) due to the application of section 911. Section 911 allows qualified individuals to exclude from gross income (within certain limitations) their foreign earned income and excess foreign housing cost. The goals of this study were: (1) to assess the impact of this type of withholding exemption on compliance and, (2) to develop a profile of filing characteristics for employees who claim the exemption. Since exemption from withholding is dependent upon employers securing required statements from employees, a review was also conducted of employer compliance in this area.

The results revealed an overall nonfiling rate of 11.5 percent for employees who, in 1984, received this type of exemption from withholding. The study also showed that employees receiving these exemptions were paid an average of $43,134 in wages in 1984. Furthermore, employers obtained less than 30 percent of the statements necessary to allow an exemption from withholding. There was no appreciable difference between the percentage of statements secured from employees who filed and those who did not file.

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SECTION IV

Statistical Tables

Table E1. Employment, Income and Population—Actual: 1980, 1987 and Projected: 1988, 1995—United States and IRS Regions

	United States		North Atlantic		Mid-Atlantic		Southeast		Central		Midwest		Southwest		Western	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Civilian Employment (thousands)																
Actual																
1980	99,303		13,860		13,721		17,002		12,895		14,239		12,497		15,089	
1987	112,438	1.89	15,891	2.09	15,535	1.89	20,223	2.71	13,783	0.96	15,007	0.77	14,419	2.20	17,800	2.38
Projected																
1988	114,930	2.22	16,257	2.30	15,895	2.32	20,724	2.48	13,961	1.44	15,304	1.98	14,717	2.07	18,072	2.88
1995	125,084	1.26	17,481	1.08	17,268	1.23	22,749	1.40	14,539	0.59	16,200	0.84	16,456	1.89	20,391	1.83
Personal Income (millions of current $)																
Actual																
1980	2,254,081		318,653		315,148		351,181		294,757		317,994		278,354		379,996	
1987	3,748,499	9.46	559,577	10.80	529,774	9.73	614,526	10.71	441,541	7.11	493,830	7.90	455,870	9.27	851,579	10.21
Projected																
1986	3,974,459	6.08	594,502	8.24	560,162	5.74	655,819	8.72	465,251	5.37	519,758	5.25	483,295	8.06	895,874	8.77
1995	8,450,809	8.90	968,239	8.98	89[illegible],526	8.53	1,085,318	9.36	727,079	8.04	811,662	8.02	805,882	9.53	1,157,923	9.49
Personal Income (millions of constant 1982 $)																
Actual																
1980	2,802,522		367,911		363,863		405,470		340,319		367,150		319,075		438,734	
1987	3,158,590	3.05	471,786	4.03	446,642	3.25	518,095	3.97	372,254	1.34	418,337	1.91	384,185	2.91	549,331	3.60
Projections																
1988	3,218,832	1.84	481,175	1.89	453,384	1.51	530,603	2.45	378,562	1.16	420,878	1.04	391,187	1.82	563,083	2.50
1995	3,751,548	2.37	563,107	2.43	520,239	2.11	831,200	2.70	422,856	1.78	472,047	1.74	488,872	2.83	673,425	2.80
Per Capita Personal Income (current $)																
Actual																
1980	9,918		10,877		10,438		8,377		9,447		9,980		8,668		11,273	
1987	15,352	7.83	18,202	10.07	18,868	8.80	13,175	8.18	14,149	7.11	15,228	7.51	13,830	8.15	18,851	7.07
Projected																
1988	16,143	5.15	19,197	5.47	17,878	4.80	13,863	5.37	14,848	4.93	15,979	4.93	14,596	5.55	17,887	4.96
1995	24,764	7.83	29,759	7.88	28,711	7.30	21,359	7.88	22,890	7.74	24,508	7.83	22,828	7.86	28,838	7.39
Per Capita Personal Income (constant 1982 $)																
Actual																
1980	11,449		12,328		12,052		9,672		10,907		11,522		11,182		13,018	
1987	12,943	1.88	15,348	3.50	14,221	2.57	11,108	2.12	11,928	1.34	12,838	1.63	11,860	0.64	14,207	1.31
Projected																
1988	13,068	0.95	15,538	1.25	14,308	0.81	11,236	1.15	12,016	0.73	12,933	0.74	11,818	1.34	14,315	0.78
1995	14,402	1.48	17,307	1.83	15,534	1.22	12,422	1.51	13,312	1.54	14,254	1.48	13,158	1.82	15,808	1.29
Population (thousands)																
Actual																
1980	227,017		29,928		30,059		41,858		31,148		31,781		28,604		33,883	
1987	244,035	1.07	30,742	0.39	31,408	0.84	46,641	1.83	31,205	0.03	32,428	0.30	32,947	2.17	38,666	2.12
Projected																
1988	246,191	0.88	30,967	0.73	31,688	0.89	47,238	1.28	31,337	0.42	32,528	0.30	33,105	0.48	39,332	1.72
1995	260,477	0.83	32,538	0.72	33,489	0.81	50,811	1.08	31,764	0.19	33,117	0.28	35,818	1.08	43,144	1.38
Population Age 65 and Over (thousands)																
Actual																
1980	25,713		3,701		3,444		5,098		3,328		3,823		2,897		3,422	
1987	29,835	2.29	4,119	1.61	3,984	2.24	6,371	3.57	3,590	1.12	4,107	1.06	3,502	2.98	4,162	3.09
Projected																
1988	30,432	2.00	4,196	1.87	4,070	2.16	6,564	3.03	3,643	1.48	4,147	0.97	3,548	1.31	4,264	2.45
1995	33,730	1.55	4,616	1.43	4,591	1.83	7,706	2.49	3,823	0.71	4,265	0.41	3,881	1.34	4,848	1.96

Table E2. Employment, Income and Population—Actual: 1980, 1987 and Projected: 1988, 1995—IRS North Atlantic Region and Districts

	North Atlantic		Albany		Augusta		Boston		Brooklyn		Buffalo		Burlington		Hartford		Manhattan		Portsmouth		Providence	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Civilian Employment (thousands)																						
Actual																						
1980	13,860		756		453		2,997		2,065		1,823		219		1,559		3,232		421		435	
1987	15,991	2.09	854	1.85	536	2.62	3,343	2.20	2,333	1.85	2,060	1.86	257	2.48	1,824	2.43	3,652	1.86	555	4.55	477	1.38
Projected																						
1988	16,257	2.30	872	2.11	548	2.24	3,425	2.45	2,381	2.06	2,103	2.09	261	1.58	1,882	3.18	3,726	2.03	572	3.06	487	2.10
1995	17,481	1.08	932	0.98	584	0.84	3,599	0.73	2,545	0.98	2,247	0.98	293	1.75	2,127	1.88	3,981	0.98	629	1.42	544	1.87
Personal Income (millions of current $)																						
Actual																						
1980	318,853		21,068		8,269		60,940		72,340		45,578		4,399		37,878		49,300		9,049		9,029	
1987	558,577	10.80	38,192	11.81	18,054	10.48	110,992	11.73	126,342	10.68	78,985	9.84	7,716	10.77	67,407	11.27	83,269	9.84	17,448	13.26	15,172	8.72
Projected																						
1988	594,502	6.24	40,600	6.30	16,948	5.57	118,572	6.83	133,901	5.98	81,353	5.67	8,218	6.51	72,011	8.83	86,004	5.69	18,657	8.93	16,237	7.02
1995	968,239	8.98	86,041	9.86	27,700	9.06	192,299	8.88	212,336	8.37	135,754	9.55	13,715	9.56	121,437	9.81	137,568	8.05	32,375	10.50	27,012	9.48
Personal Income (millions of constant 1982 $)																						
Actual																						
1980	367,911		24,326		10,702		70,359		83,522		52,625		5,080		43,504		56,920		10,448		10,425	
1987	471,786	4.03	32,199	4.62	13,534	3.78	93,575	4.71	106,517	3.93	84,904	3.33	6,505	4.01	58,828	4.38	70,202	3.33	14,710	5.83	12,791	3.24
Projections																						
1988	481,175	1.99	32,860	2.05	13,718	1.36	95,970	2.56	108,377	1.75	85,845	1.45	6,651	2.24	58,204	2.56	71,229	1.46	15,100	2.65	13,141	2.74
1995	563,107	2.43	39,571	2.92	16,109	2.49	111,838	2.36	123,492	1.99	78,952	2.64	7,976	2.85	70,825	3.02	80,007	1.78	18,928	3.53	15,709	2.79
Per Capita Personal Income (current $)																						
Actual																						
1980	10,677		8,743		8,203		10,618		10,820		10,018		8,627		12,115		12,173		9,836		9,505	
1987	18,202	10.07	18,811	10.07	13,490	9.21	18,618	11.17	18,114	9.63	18,532	9.29	14,029	8.85	20,914	10.36	19,584	8.67	16,444	8.60	15,308	8.72
Projected																						
1988	19,187	5.47	17,827	6.12	14,112	4.61	20,012	5.78	19,125	5.58	17,590	6.45	14,648	4.41	22,138	5.84	20,582	5.20	17,274	5.05	16,384	7.02
1995	29,759	7.98	27,343	7.87	21,811	7.78	30,738	7.86	28,940	7.33	27,845	8.32	22,483	7.84	34,875	8.22	30,452	6.85	27,647	8.58	26,482	8.80
Per Capita Personal Income (constant 1982 $)																						
Actual																						
1980	12,326		11,249		9,471		12,257		12,493		11,566		9,961		13,988		14,055		11,357		10,974	
1987	15,346	3.50	14,005	3.50	11,373	2.87	15,948	4.30	15,272	3.18	13,938	2.93	11,827	2.68	17,632	3.72	16,494	2.48	13,864	3.15	12,907	2.52
Projected																						
1988	15,538	1.25	14,267	1.87	11,422	0.43	16,197	1.55	15,479	1.38	14,243	2.19	11,856	0.25	17,917	1.62	16,658	0.99	13,982	0.85	13,261	2.74
1995	17,307	1.83	15,902	1.64	12,684	1.58	17,876	1.48	18,831	1.25	18,194	1.96	13,076	1.47	20,293	1.99	17,710	0.90	16,079	2.14	15,401	2.31
Population (thousands)																						
Actual																						
1980	29,926		2,180		1,129		5,740		6,730		4,579		509		3,110		4,079		920		950	
1987	30,742	0.39	2,253	0.48	1,190	0.77	5,867	0.32	6,887	0.29	4,555	-0.07	550	1.15	3,223	0.52	4,185	0.37	1,061	2.19	991	0.82
Projected																						
1988	30,967	0.73	2,272	0.84	1,201	0.92	5,925	0.99	6,906	0.57	4,585	0.22	561	2.00	3,253	0.93	4,213	0.67	1,080	1.79	991	0.00
1995	32,536	0.72	2,432	1.01	1,270	0.92	6,256	0.80	7,157	0.52	4,774	0.85	610	1.25	3,462	1.01	4,384	0.51	1,171	1.20	1,020	0.42
Population Age 65 and Over (thousands)																						
Actual																						
1980	3,701		270		142		730		822		551		58		367		530		103		128	
1987	4,118	1.61	292	1.18	155	1.31	801	1.39	839	2.03	591	1.04	64	1.48	433	2.57	576	1.24	119	2.22	149	2.34
Projected																						
1988	4,196	1.87	298	1.37	157	1.29	816	1.87	857	1.82	600	1.52	65	1.58	445	2.77	586	1.74	122	2.52	152	2.01
1995	4,616	1.43	317	1.01	167	0.91	863	1.17	1,061	1.55	645	1.07	70	1.10	532	2.78	635	1.19	129	0.82	177	2.35

Table E3. Employment, Income and Population—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Mid-Atlantic Region and Districts

	Mid-Atlantic		Baltimore		Newark		Philadelphia		Pittsburgh		Richmond		Wilmington	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Civilian Employment (thousands)														
Actual														
1980	13,721		2,541		3,345		3,448		1,747		2,356		262	
1987	15,535	1.89	2,912	2.09	3,996	2.76	3,582	0.56	1,815	0.56	2,869	3.22	341	2.99
Projected														
1988	15,895	2.32	2,983	2.44	4,090	2.35	3,648	1.84	1,846	1.82	2,978	3.08	348	2.05
1995	17,268	1.23	3,300	1.52	4,424	1.17	3,863	0.84	1,956	0.83	3,335	1.71	390	1.72
Personal Income (millions of current $)														
Actual														
1980	315,146		53,510		85,409		72,669		44,750		52,699		8,089	
1987	529,774	8.73	82,261	10.35	151,190	11.00	115,933	8.50	84,310	6.24	95,948	11.72	10,132	9.49
Projected														
1988	560,162	5.74	86,376	4.46	160,028	5.85	123,404	6.44	87,792	5.41	101,771	6.07	10,791	8.50
1995	694,528	8.53	156,962	8.98	255,743	8.54	181,186	7.85	104,777	7.79	167,847	9.28	18,011	9.58
Personal Income (millions of constant 1982 $)														
Actual														
1980	363,883		61,781		98,612		83,826		51,667		60,848		7,031	
1987	446,642	3.25	77,783	3.70	127,498	4.18	97,741	2.35	54,216	0.71	80,892	4.71	8,542	3.07
Projections														
1988	453,384	1.51	76,005	0.29	129,524	1.61	99,881	2.19	54,859	1.20	82,371	1.83	8,734	2.25
1995	520,238	2.11	81,286	2.43	148,736	2.12	111,190	1.62	60,936	1.58	87,617	2.64	10,474	2.85
Per Capita Personal Income (current $)														
Actual														
1980	10,438		11,010		11,588		9,915		9,716		9,832		10,149	
1987	16,888	8.60	17,824	8.84	18,663	9.95	14,860	7.27	13,815	8.03	18,188	9.24	15,587	7.65
Projected														
1988	17,678	4.80	18,409	3.28	20,830	4.82	15,747	5.26	14,813	5.76	16,922	4.53	16,349	4.89
1995	26,711	7.30	28,255	7.84	31,085	7.24	23,862	7.18	22,698	7.80	25,884	7.40	25,331	7.85
Per Capita Personal Income (constant 1982 $)														
Actual														
1980	12,052		12,712		13,360		11,447		11,218		11,351		11,718	
1987	14,221	2.57	15,027	2.60	16,577	3.41	12,812	1.45	11,647	0.55	13,648	2.89	13,141	1.73
Projected														
1988	14,308	0.61	14,900	-0.65	18,697	0.72	12,746	1.06	11,627	1.55	13,696	0.35	13,233	0.70
1995	15,534	1.22	16,433	1.47	18,078	1.18	13,781	1.14	13,198	1.66	14,837	1.28	14,732	1.62
Population (thousands)														
Actual														
1980	30,058		4,660		7,370		7,290		4,578		5,360		600	
1987	31,408	0.64	5,176	0.93	7,689	0.62	7,489	0.38	4,475	-0.32	5,927	1.51	650	1.19
Projected														
1988	31,888	0.89	5,235	1.14	7,757	0.88	7,546	0.76	4,474	-0.02	6,014	1.47	660	1.54
1995	33,488	0.81	5,555	0.87	8,227	0.87	7,907	0.68	4,554	0.26	6,535	1.24	711	1.10
Population Age 65 and Over (thousands)														
Actual														
1980	3,444		473		865		844		594		509		59	
1987	3,964	2.24	588	2.87	1,011	2.41	1,067	1.86	655	1.47	609	2.81	74	3.63
Projected														
1988	4,070	2.16	564	2.82	1,038	2.47	1,084	1.59	664	1.37	626	2.79	76	2.70
1995	4,591	1.83	678	2.25	1,192	2.15	1,204	1.58	724	1.29	705	1.80	90	2.63

Table E4. Employment, Income and Population—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Southeast Region and Districts

	Southeast		Atlanta		Birmingham		Columbia		Fort Lauderdale		Greensboro		Jackson		Jacksonville		Little Rock		Nashville		New Orleans	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Civilian Employment (thousands)																						
Actual																						
1980	17,002		2,360		1,482		1,300		---		2,801		906		---		811		1,909		1,725	
1987	20,223	2.71	3,027	4.04	1,521	1.34	1,525	2.47	2,380	---	3,087	2.67	950	0.89	2,871	---	917	1.87	2,203	2.21	1,842	-0.69
Projected																						
1988	20,724	2.48	3,128	3.34	1,854	2.04	1,557	2.10	2,465	3.57	3,163	2.49	964	1.47	2,974	3.59	922	0.55	2,259	2.54	1,638	-0.24
1995	22,749	1.40	3,456	1.50	1,743	0.77	1,898	1.29	2,825	2.09	3,387	1.01	1,010	0.88	3,408	2.08	983	0.95	2,408	0.95	1,830	1.97
Personal Income (millions of current $)																						
Actual																						
1980	351,181		45,809		30,059		23,789		---		47,179		17,500		---		17,109		36,948		36,899	
1987	814,528	10.71	87,651	13.05	48,568	8.80	40,428	9.99	84,234	---	85,125	11.49	26,789	7.58	101,531	---	27,490	8.67	62,055	9.71	50,660	5.43
Projected																						
1988	855,819	9.72	92,768	5.84	51,382	5.80	43,185	8.82	91,273	8.38	90,628	6.46	28,253	5.47	110,633	8.96	29,017	5.55	68,042	6.42	52,638	3.90
1995	1,085,319	9.38	153,833	9.37	80,898	8.21	69,933	8.85	155,078	9.99	144,243	8.45	45,303	8.62	198,208	11.05	46,838	8.77	107,782	9.03	85,404	8.89
Personal Income (millions of constant 1982 $)																						
Actual																						
1980	405,470		52,891		34,706		27,487		---		54,472		20,205		---		19,754		42,661		42,372	
1987	518,099	3.97	73,897	5.67	40,945	2.57	34,084	3.44	71,016	---	71,767	4.54	22,584	1.89	85,599	---	23,176	2.47	52,317	3.23	42,710	0.11
Projections																						
1988	530,809	2.45	75,084	1.61	41,587	1.57	34,953	2.55	73,874	4.02	73,352	2.21	22,867	1.25	89,544	4.61	23,485	1.33	53,453	2.17	42,804	-0.25
1995	631,204	2.70	89,350	2.71	47,049	1.88	40,671	2.34	90,191	3.19	83,889	2.05	26,347	2.17	114,110	3.92	27,240	2.28	62,684	2.47	49,669	2.37
Per Capita Personal Income (current $)																						
Actual																						
1980	8,377		8,359		7,707		7,800		---		8,010		6,916		---		7,471		9,032		8,898	
1987	13,175	8.16	14,030	9.89	11,862	7.70	11,772	7.84	15,872	---	13,242	9.33	10,177	9.74	13,902	---	11,492	7.69	12,752	8.39	11,349	4.36
Projected																						
1988	13,893	5.37	14,595	4.03	12,489	5.29	12,438	5.66	16,854	6.19	13,910	5.04	10,897	5.11	14,841	6.75	12,080	5.12	13,439	5.39	11,871	4.61
1995	21,359	7.89	22,444	7.88	19,108	7.57	18,988	7.52	25,441	7.28	20,919	7.20	16,835	8.20	22,955	7.91	18,571	7.89	21,200	8.25	18,469	7.94
Per Capita Personal Income (constant 1982 $)																						
Actual																						
1990	9,672		9,851		9,899		8,775		---		9,248		7,986		---		8,628		9,274		10,040	
1987	11,108	2.12	11,929	3.22	10,001	1.77	9,925	1.87	13,381	---	11,164	2.96	8,580	1.06	11,721	---	9,869	1.76	10,751	2.28	9,587	-0.67
Projected																						
1988	11,236	1.15	11,813	-0.14	10,108	1.07	10,067	1.43	13,942	1.95	11,259	0.85	8,658	0.91	12,012	2.48	9,777	0.91	10,877	1.17	9,808	0.43
1995	12,422	1.51	13,053	1.50	11,112	1.42	11,043	1.39	14,798	1.21	12,186	1.15	9,790	1.87	13,350	1.59	10,801	1.50	12,329	1.91	10,741	1.66
Population (thousands)																						
Actual																						
1980	41,976		5,480		3,900		3,129		---		5,669		2,530		---		2,299		4,600		4,220	
1987	46,841	1.59	6,247	2.00	4,094	0.71	3,434	1.39	5,090	---	6,428	1.31	2,632	0.58	8,994	---	2,392	0.84	4,988	0.83	4,464	0.93
Projected																						
1988	47,236	1.26	6,358	1.74	4,114	0.49	3,472	1.11	5,204	2.24	6,515	1.35	2,641	0.34	7,186	2.75	2,402	0.42	4,914	0.99	4,434	-0.67
1995	50,811	1.08	6,845	1.10	4,234	0.42	3,693	0.87	5,936	2.01	6,895	0.83	2,891	0.27	8,287	2.21	2,522	0.71	5,084	0.49	4,624	0.61
Population Age 65 and Over (thousands)																						
Actual																						
1980	5,098		520		443		289		---		807		291		---		314		520		408	
1987	6,371	3.57	656	3.74	517	2.39	365	3.76	1,139	---	768	3.74	330	1.91	1,185	---	347	1.50	596	2.14	468	2.10
Projected																						
1988	6,564	3.03	677	3.20	527	1.93	378	3.56	1,185	4.04	792	3.39	335	1.52	1,235	4.22	354	2.02	611	2.17	470	0.43
1995	7,706	2.49	766	2.30	583	1.52	456	2.95	1,480	3.58	934	2.56	358	0.98	1,547	3.61	376	0.89	663	1.22	523	1.61

Table E5. Employment, Income and Population—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Central Region and Districts

	Central		Cincinnati		Cleveland		Detroit		Indianapolis		Louisville		Parkersburg	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Civilian Employment (thousands)														
Actual														
1980	12,895		2,029		2,745		3,764		2,328		1,323		706	
1987	13,763	0.96	2,166	0.96	2,930	0.96	4,019	0.97	2,550	1.38	1,435	1.21	663	-0.87
Projected														
1988	13,961	1.44	2,200	1.57	2,977	1.60	4,067	1.19	2,584	1.33	1,460	1.74	673	1.51
1995	14,539	0.59	2,280	0.52	3,086	0.52	4,196	0.45	2,725	0.78	1,537	0.75	715	0.88
Personal Income (millions of current $)														
Actual														
1980	294,757		43,320		61,719		94,079		50,789		29,390		15,460	
1987	441,541	7.11	68,419	8.26	90,217	6.60	140,416	7.04	76,957	7.38	44,477	7.33	21,055	5.17
Projected														
1988	465,251	5.37	72,840	6.17	95,094	5.41	146,988	4.68	81,154	5.45	47,363	6.49	22,034	4.65
1995	727,079	8.04	117,151	8.75	147,204	7.63	229,608	8.03	125,435	7.79	75,156	8.36	32,525	6.80
Personal Income (millions of constant 1982 $)														
Actual														
1980	340,319		50,016		71,260		106,622		58,640		33,932		17,849	
1987	372,254	1.34	57,683	2.19	76,060	0.96	118,362	1.28	64,881	1.52	37,487	1.50	17,751	-0.06
Projections														
1988	376,562	1.16	58,793	1.92	76,867	1.19	118,951	0.48	65,684	1.24	38,334	2.23	17,833	0.46
1995	422,856	1.78	68,133	2.27	85,611	1.80	133,538	1.75	72,951	1.58	43,709	2.00	18,916	0.87
Per Capita Personal Income (current $)														
Actual														
1980	8,447		9,451		9,883		10,170		9,251		8,030		7,928	
1987	14,149	7.11	14,337	7.38	14,397	6.57	15,227	7.10	13,873	7.14	11,914	6.91	11,069	5.66
Projected														
1988	14,846	4.93	15,118	5.45	15,165	5.33	15,641	4.03	14,582	5.11	12,620	5.83	11,645	5.20
1995	22,890	7.74	23,290	7.72	23,267	7.65	24,408	7.73	22,185	7.45	19,556	7.85	17,763	7.51
Per Capita Personal Income (constant 1982 $)														
Actual														
1980	10,907		10,913		11,388		11,742		10,681		9,271		9,153	
1987	11,929	1.34	12,067	1.54	12,138	0.94	12,838	1.33	11,696	1.36	10,044	1.19	9,332	0.28
Projected														
1988	12,018	0.73	12,238	1.23	12,274	1.12	12,822	-0.12	11,803	0.91	10,214	1.69	9,425	1.00
1995	13,312	1.54	13,545	1.53	13,543	1.46	14,195	1.53	12,802	1.33	11,373	1.62	10,330	1.37
Population (thousands)														
Actual														
1980	31,148		4,569		6,230		9,250		5,490		3,659		1,950	
1987	31,205	0.03	4,671	0.32	6,131	-0.23	9,221	-0.04	5,547	0.15	3,733	0.29	1,902	-0.35
Projected														
1988	31,337	0.42	4,704	0.71	6,146	0.24	9,277	0.61	5,585	0.32	3,753	0.54	1,892	-0.53
1995	31,764	0.19	4,674	0.52	6,155	0.02	9,407	0.20	5,654	0.23	3,843	0.34	1,831	-0.46
Population Age 65 and Over (thousands)														
Actual														
1980	3,328		471		703		915		588		412		239	
1987	3,590	1.12	516	1.36	787	1.30	996	1.26	632	1.07	434	0.76	245	0.36
Projected														
1988	3,643	1.48	525	1.74	779	1.58	1,014	1.81	641	1.42	438	0.92	246	0.41
1995	3,823	0.71	568	1.17	823	0.81	1,078	0.87	663	0.49	442	0.13	251	0.29

Table E6. Employment, Income and Population—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Midwest Region and Districts

	Midwest		Aberdeen		Chicago		Des Moines		Fargo		Helena		Milwaukee		Omaha		St. Louis		St. Paul		Springfield	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Civilian Employment (thousands)																						
Actual																						
1980	14,239		260		4,232		1,213		268		306		2,118		685		2,153		1,935		1,069	
1987	15,007	0.77	281	1.15	4,313	0.27	1,196	-0.20	273	0.27	303	-0.14	2,266	1.01	737	1.08	2,412	1.72	2,134	1.47	1,090	0.26
Projected																						
1988	15,304	1.98	286	1.76	4,397	1.95	1,219	1.92	275	0.73	310	2.31	2,320	2.29	746	1.22	2,456	1.82	2,184	2.34	1,111	1.93
1995	16,200	0.84	314	1.40	4,581	0.60	1,310	1.07	302	1.40	329	0.83	2,474	0.95	796	0.96	2,560	0.72	2,358	1.14	1,157	0.59
Personal Income (millions of current $)																						
Actual																						
1980	317,994		5,660		93,890		27,609		5,589		7,040		48,409		14,590		45,769		41,099		30,119	
1987	493,830	7.90	8,908	9.12	145,146	7.60	40,566	6.56	8,659	6.36	9,951	5.91	70,603	7.45	23,810	9.63	73,931	6.79	66,965	8.99	45,269	7.19
Projected																						
1988	519,758	5.25	9,313	4.55	153,368	5.66	41,837	3.06	9,153	3.32	10,249	2.99	74,472	5.48	24,566	4.05	78,149	5.71	70,936	5.93	47,713	5.40
1995	611,662	6.02	14,243	7.56	239,966	9.07	65,019	7.82	14,343	6.10	15,250	6.97	115,825	7.93	37,936	7.77	122,375	6.08	111,756	6.22	74,947	8.15
Personal Income (millions of constant 1982 $)																						
Actual																						
1980	367,150		6,557		108,403		32,108		6,454		8,126		53,583		18,845		52,844		47,453		34,775	
1987	416,337	1.61	7,510	2.08	122,370	1.84	34,219	0.94	7,488	2.24	8,389	0.48	59,524	1.58	19,905	2.60	62,330	2.58	56,457	2.71	36,195	1.39
Projections																						
1988	420,678	1.04	7,537	0.36	124,133	1.44	33,662	-1.04	7,408	-0.60	8,295	-1.12	60,276	1.26	19,883	-0.11	63,252	1.48	57,414	1.70	36,619	1.19
1995	472,047	1.74	8,263	1.41	139,560	1.76	37,814	1.67	8,341	1.90	8,889	0.99	67,362	1.88	22,063	1.57	71,171	1.79	64,996	1.89	43,588	1.94
Per Capita Personal Income (current $)																						
Actual																						
1980	8,980		8,231		11,270		9,523		8,599		8,911		9,853		9,292		9,302		10,073		8,817	
1987	15,228	7.51	12,526	7.48	16,664	6.84	14,278	7.13	13,202	7.65	12,270	5.36	14,660	6.97	14,747	8.39	14,450	7.91	15,737	8.03	14,309	8.97
Projected																						
1988	15,979	4.93	13,098	4.55	17,854	5.94	14,715	3.06	13,640	3.32	12,837	2.99	15,409	5.11	15,440	4.70	15,192	5.13	16,600	5.46	15,140	5.81
1995	24,508	7.63	19,791	7.29	26,233	6.94	22,831	7.69	21,375	8.10	18,373	8.49	23,337	7.35	23,709	7.65	23,421	7.74	25,609	7.75	22,335	8.79
Per Capita Personal Income (constant 1982 $)																						
Actual																						
1980	11,522		8,504		13,013		10,996		9,929		10,286		11,378		10,729		10,740		11,630		11,104	
1987	12,838	1.63	10,562	1.59	14,049	1.14	12,038	1.35	11,130	1.73	10,344	0.08	12,359	1.23	12,433	2.27	12,183	1.92	13,268	2.01	12,064	1.24
Projected																						
1988	12,933	0.74	10,601	0.37	14,289	1.71	11,910	-1.05	11,040	-0.91	10,226	-1.12	12,471	0.91	12,497	0.51	12,296	0.93	13,436	1.27	12,254	1.57
1995	14,254	1.48	11,504	1.22	15,257	0.97	13,161	1.50	12,431	1.80	10,665	0.84	13,572	1.26	13,789	1.48	13,621	1.54	14,693	1.55	12,990	0.66
Population (thousands)																						
Actual																						
1980	31,761		689		8,308		2,919		649		769		4,709		1,569		4,920		4,079		3,129	
1987	32,426	0.30	711	0.46	8,501	0.33	2,843	-0.37	671	0.46	811	0.40	4,918	0.32	1,601	0.29	5,116	0.57	4,255	0.62	3,103	-0.12
Projected																						
1988	32,526	0.30	711	0.00	8,544	0.51	2,843	0.00	671	0.00	811	0.00	4,933	0.35	1,591	-0.62	5,144	0.55	4,273	0.42	3,105	0.06
1995	33,117	0.26	720	0.16	8,699	0.28	2,873	0.15	671	0.00	830	0.33	4,963	0.36	1,600	0.08	5,225	0.22	4,384	0.30	3,172	0.31
Population Age 65 and Over (thousands)																						
Actual																						
1980	3,823		91		858		390		61		65		567		207		651		482		411	
1987	4,107	1.08	97	0.94	961	1.71	392	0.07	90	1.59	91	1.01	615	1.21	218	0.62	709	1.27	523	1.22	413	0.07
Projected																						
1988	4,147	0.97	98	1.03	977	1.66	393	0.26	91	1.11	91	0.00	623	1.30	218	0.00	718	0.99	527	0.76	415	0.48
1995	4,265	0.41	101	0.44	1,045	0.99	398	0.16	97	0.94	94	0.47	646	0.53	213	-0.20	721	0.10	533	0.16	417	0.07

Table E7. Employment, Income and Population—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Southwest Region and Districts

	Southwest		Albuquerque		Austin		Cheyenne		Dallas		Denver		Houston		Oklahoma City		Phoenix		Salt Lake City		Wichita	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Civilian Employment (thousands)																						
Actual																						
1980	12,487		508		---		230		2,898		1,387		---		1,244		1,108		802		1,032	
1987	14,419	2.20	590	2.31	1,884	---	212	-1.12	3,323	2.11	1,834	2.79	2,144	---	1,259	0.17	1,537	5.53	719	2.79	1,117	1.18
Projected																						
1988	14,717	2.07	618	4.41	1,908	1.27	215	1.42	3,364	1.23	1,898	3.92	2,170	1.21	1,265	0.48	1,588	3.32	749	4.17	1,144	2.42
1995	18,458	1.68	712	2.23	2,108	1.50	248	2.19	3,717	1.50	1,848	2.08	2,398	1.50	1,368	1.18	1,873	2.58	858	2.08	1,228	1.05
Personal Income (millions of current $)																						
Actual																						
1980	278,354		10,710		---		5,379		80,360		30,838		---		28,589		25,089		11,710		23,548	
1987	455,870	9.27	17,538	9.11	86,442	---	8,333	2.53	101,386	9.71	52,224	9.91	85,490	---	41,470	6.44	47,834	12.84	19,051	8.96	38,102	8.83
Projected																						
1988	483,295	6.06	18,637	6.27	70,906	8.72	8,702	5.83	107,791	6.32	54,910	5.14	89,157	5.60	43,858	5.27	50,831	6.71	20,355	6.84	40,350	5.90
1995	805,862	9.53	31,328	9.73	124,308	10.76	10,765	8.70	175,384	8.98	92,361	9.74	114,918	9.45	70,780	6.87	88,244	10.51	35,028	10.30	62,766	7.94
Personal Income (millions of constant 1982 $)																						
Actual																						
1980	319,075		12,365		---		8,211		89,890		35,607		---		33,009		28,969		13,520		27,190	
1987	384,185	2.91	14,786	2.60	58,018	---	5,339	-2.01	95,477	3.24	44,028	3.38	55,213	---	34,962	0.85	40,159	5.52	18,061	2.88	32,123	2.59
Projections																						
1988	391,187	1.82	15,064	2.02	57,390	2.45	5,424	1.59	97,244	2.07	44,443	0.94	55,974	1.38	35,334	1.08	41,141	2.45	18,475	2.58	32,658	1.67
1995	468,872	2.83	18,220	2.97	72,296	3.71	6,272	2.23	101,988	2.41	53,715	2.86	66,834	2.77	41,152	2.35	51,321	3.53	20,370	3.38	36,503	1.88
Per Capita Personal Income (current $)																						
Actual																						
1980	9,866		9,175		---		11,446		10,218		10,597		---		9,404		9,190		7,965		8,938	
1987	13,830	8.15	11,878	8.12	11,685	---	12,924	1.64	14,593	8.12	15,808	7.02	15,340	---	12,656	4.96	13,993	7.47	11,328	8.03	15,351	7.79
Projected																						
1988	14,598	5.55	12,261	5.01	12,369	5.85	13,705	6.04	15,345	5.15	16,574	4.86	16,148	5.27	13,338	5.31	14,598	4.32	11,959	5.59	16,191	5.47
1995	22,826	7.86	19,081	7.96	19,925	8.73	21,188	7.80	24,121	8.17	25,429	7.63	25,378	8.18	20,380	7.54	22,494	7.73	19,015	8.43	24,789	7.58
Per Capita Personal Income (constant 1982 $)																						
Actual																						
1980	11,182		9,439		---		13,218		11,797		12,236		---		10,858		10,811		9,197		11,472	
1987	11,660	0.64	9,944	0.81	9,852	---	10,896	-2.51	12,303	0.81	13,328	1.27	12,933	---	10,878	-0.24	11,797	1.80	9,549	0.55	12,942	1.83
Projected																						
1988	11,818	1.34	9,924	0.81	10,011	1.61	11,083	1.91	12,420	0.95	13,414	0.86	13,071	1.07	10,785	1.10	11,815	0.15	9,879	1.38	13,105	1.26
1995	13,159	1.82	11,103	1.70	11,588	2.25	12,322	1.58	14,026	1.95	14,788	1.48	14,758	1.94	11,852	1.40	13,082	1.53	11,058	2.04	14,416	1.43
Population (thousands)																						
Actual																						
1980	28,804		1,310		---		489		5,910		2,909		---		3,039		2,728		1,469		2,370	
1987	32,947	2.17	1,502	2.09	5,853	---	490	0.64	6,903	2.40	3,304	1.94	4,253	---	3,274	1.10	3,404	3.53	1,682	2.07	2,482	0.68
Projected																						
1988	33,105	0.48	1,520	1.20	5,871	0.32	489	-0.20	6,912	0.13	3,313	0.27	4,251	-0.05	3,273	-0.03	3,482	2.29	1,702	1.18	2,492	0.40
1995	35,818	1.08	1,641	1.14	6,236	1.42	509	0.58	7,256	0.71	3,832	1.38	4,573	1.08	3,472	0.87	3,923	1.81	1,842	1.18	2,532	0.23
Population Age 65 and Over (thousands)																						
Actual																						
1980	2,897		117		---		37		840		250		---		390		310		110		308	
1987	3,502	2.96	158	5.01	580	---	36	-0.39	764	2.77	278	1.60	358	---	422	1.58	443	6.13	127	2.21	338	1.30
Projected																						
1988	3,548	1.31	163	3.16	585	0.86	35	-2.78	787	0.38	281	1.08	365	1.96	421	-0.24	462	4.29	129	1.57	340	1.19
1995	3,861	1.34	209	4.03	624	0.95	31	-1.63	786	0.35	298	0.86	420	2.15	429	0.27	597	4.17	139	1.11	348	0.34

Table E8. Employment, Income and Population—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Western Region and Districts

	Western		Anchorage		Boise		Honolulu		Laguna Niguel		Las Vegas		Los Angeles		Portland		Sacramento		San Francisco		San Jose		Seattle	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Civilian Employment (thousands)																								
Actual																								
1980	15,089		185		361		442		---		438		---		1,142		---		---		---		1,758	
1987	17,600	2.38	243	4.48	375	0.55	488	1.42	2,739	---	534	3.21	4,870	---	1,187	0.56	1,445	---	1,655	---	2,272	---	1,994	1.92
Projected																								
1988	18,072	2.68	248	1.23	380	1.33	495	1.85	2,817	2.85	554	3.75	4,904	2.87	1,207	1.68	1,485	2.77	1,701	2.78	2,338	2.82	2,047	2.68
1995	20,391	1.83	267	2.38	399	0.71	558	1.82	3,200	1.84	894	3.81	5,455	1.94	1,308	1.20	1,667	1.94	1,931	1.93	2,652	1.93	2,220	1.21
Personal Income (millions of current $)																								
Actual																								
1980	379,998		5,600		8,128		10,279		---		9,250		---		26,059		---		---		---		44,570	
1987	851,579	10.21	8,860	8.57	11,645	8.18	17,037	9.39	143,396	---	16,144	10.65	121,809	---	36,393	8.78	78,502	---	53,498	---	91,150	---	71,245	8.55
Projected																								
1988	895,874	6.77	9,223	2.94	11,888	2.07	18,287	7.22	153,788	7.25	17,602	9.03	129,353	6.37	41,295	7.58	83,898	6.87	57,051	6.64	97,473	6.94	75,838	6.45
1995	1,157,923	9.49	14,324	7.90	18,559	8.02	30,221	9.35	270,462	10.84	30,700	10.63	202,803	8.09	86,306	8.85	145,229	10.44	87,725	7.68	187,049	10.20	124,746	9.21
Personal Income (millions of constant 1982 $)																								
Actual																								
1980	438,734		6,465		9,386		11,869		---		10,679		---		30,088		---		---		---		51,459	
1987	549,331	3.80	7,554	2.41	9,817	0.66	14,383	3.00	120,995	---	13,610	3.92	102,528	---	32,368	1.09	88,193	---	45,103	---	78,647	---	60,085	2.39
Projections																								
1988	563,063	2.50	7,464	-1.19	9,620	-2.01	14,785	2.94	124,473	2.96	14,248	4.67	104,898	2.12	33,423	3.26	87,905	2.60	46,176	2.38	78,893	2.66	61,382	2.19
1995	673,425	2.60	8,330	1.66	10,783	1.74	17,578	2.70	157,296	3.77	17,854	3.62	117,830	1.79	36,562	2.20	84,463	3.48	51,019	1.50	97,152	3.31	72,550	2.60
Per Capita Personal Income (current $)																								
Actual																								
1980	11,273		13,658		8,557		10,587		---		11,419		---		9,871		---		---		---		10,765	
1987	18,851	7.07	17,187	3.70	11,833	5.14	15,815	8.78	17,622	---	15,968	5.89	18,958	---	14,053	6.05	17,059	---	20,381	---	18,724	---	15,641	6.47
Projected																								
1988	17,697	4.96	17,738	3.13	11,874	2.07	18,458	5.38	18,720	6.23	18,783	4.98	17,880	5.33	14,956	6.43	18,069	5.92	21,433	5.26	17,897	5.82	18,438	5.08
1995	26,838	7.39	26,575	7.12	18,185	7.60	24,371	8.87	29,421	8.17	24,758	8.81	27,058	7.38	22,940	7.53	28,020	7.87	32,432	7.33	27,337	7.78	25,648	8.01
Per Capita Personal Income (constant 1982 $)																								
Actual																								
1980	13,018		15,769		9,880		12,238		---		13,184		---		11,397		---		---		---		12,429	
1987	14,207	1.31	14,499	-1.15	9,807	-0.11	13,185	1.06	14,857	---	13,462	0.30	14,296	---	11,847	0.58	14,382	---	17,168	---	14,100	---	13,168	0.87
Projected																								
1988	14,315	0.76	14,355	-0.99	9,610	-2.01	13,318	1.17	15,151	1.98	13,568	0.79	14,455	1.11	12,105	2.18	14,825	1.89	17,348	1.08	14,324	1.59	13,303	0.89
1995	15,808	1.29	15,455	1.08	10,561	1.44	14,174	0.82	17,111	1.85	14,398	0.87	15,737	1.27	13,283	1.39	16,298	1.83	18,882	1.25	15,899	1.57	14,915	1.73
Population (thousands)																								
Actual																								
1980	33,863		410		950		989		---		810		---		2,839		---		---		---		4,139	
1987	38,866	2.12	521	3.87	1,001	0.77	1,081	1.60	7,957	---	1,011	3.54	7,227	---	2,732	0.50	4,545	---	2,632	---	5,394	---	4,555	1.44
Projected																								
1988	39,332	1.72	520	-0.19	1,001	0.00	1,110	1.74	8,140	2.30	1,050	3.86	7,329	1.41	2,781	1.06	4,638	2.00	2,663	1.18	5,506	2.11	4,614	1.30
1995	43,144	1.38	539	0.52	1,020	0.27	1,240	1.87	8,295	2.03	1,240	2.58	7,784	0.89	2,903	0.73	5,253	1.90	2,782	0.64	6,224	1.66	4,864	0.77
Population Age 65 and Over (thousands)																								
Actual																								
1980	3,422		12		94		76		---		86		---		305		---		---		---		435	
1987	4,162	3.09	18	7.14	101	1.06	105	5.45	727	---	96	6.49	902	---	321	0.75	528	---	331	---	538	---	487	2.04
Projected																								
1988	4,264	2.45	18	0.00	101	0.00	110	4.76	752	3.44	101	5.21	920	2.00	325	1.25	541	2.85	337	1.81	553	2.79	506	1.81
1995	4,848	1.96	23	3.97	100	-0.14	147	4.81	908	2.96	140	5.52	1,019	1.54	338	0.48	634	2.46	384	1.14	637	2.17	540	0.96

Table E9. Employment, Income and Population—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Service Centers

	Andover		Brookhaven		Philadelphia		Atlanta		Memphis		Cincinnati		Kansas City		Austin		Ogden		Fresno	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Civilian Employment (thousands)																				
Actual																				
1980	9,563		9,842		10,377		7,589		9,433		12,895		12,720		9,190		9,925		9,990	
1987	9,906	2.24	9,981	2.21	11,540	1.60	9,803	4.22	10,420	1.49	13,783	0.96	13,413	0.78	10,317	1.75	11,474	2.23	11,822	2.62
Projected																				
1988	10,150	2.46	10,197	2.19	11,806	2.31	10,124	3.27	10,600	1.73	13,961	1.44	13,897	2.04	10,467	1.45	11,788	2.72	12,153	2.80
1995	10,955	1.13	10,950	1.05	12,845	1.28	11,367	1.78	11,362	1.03	14,539	0.59	14,490	0.81	11,531	1.45	13,260	1.79	13,798	1.93
Personal Income (millions of current $)																				
Actual																				
1980	197,019		207,049		229,740		185,689		185,499		294,759		285,099		203,339		243,819		242,099	
1987	349,988	11.09	360,801	10.81	378,585	9.28	313,844	12.77	300,684	8.87	441,541	7.11	442,502	7.89	330,428	8.93	401,459	9.24	428,890	10.89
Projected																				
1988	372,597	8.47	381,933	5.86	400,135	5.69	337,859	7.65	317,960	5.75	465,251	5.37	466,475	5.42	350,497	6.07	425,821	6.07	455,932	6.85
1995	618,333	9.42	605,649	8.37	638,784	9.52	574,850	10.02	510,498	8.65	727,079	8.04	729,890	8.07	579,446	9.33	706,052	9.47	758,059	9.47
Personal Income (millions of constant 1982 $)																				
Actual																				
1980	227,474		239,054		265,253		191,301		214,173		340,322		329,159		234,771		291,508		279,522	
1987	295,051	4.24	304,195	3.89	319,179	2.90	264,597	5.47	253,502	2.62	372,256	1.34	373,088	1.91	278,578	2.97	338,464	2.89	359,735	4.10
Projections																				
1988	301,574	2.21	309,130	1.63	323,982	1.47	273,457	3.35	257,351	1.52	378,568	1.18	377,557	1.20	283,866	1.83	344,852	1.83	369,024	2.58
1995	359,613	2.75	352,238	1.99	371,507	2.10	334,324	3.18	296,880	2.19	422,958	1.78	424,493	1.78	338,997	2.68	411,792	2.78	440,875	2.78
Per Capita Personal Income (current $)																				
Actual																				
1980	10,260		11,378		10,191		8,557		9,857		9,492		10,147		9,517		10,127		11,575	
1987	17,412	9.98	19,251	9.89	15,886	7.98	13,860	9.52	13,814	8.51	14,209	7.10	15,404	7.40	13,358	5.78	14,847	8.66	17,558	7.38
Projected																				
1988	18,387	5.60	20,233	5.10	18,853	4.83	14,409	5.48	14,508	5.01	14,903	4.88	18,164	4.93	14,118	5.71	15,598	4.86	18,421	4.92
1995	28,767	8.08	30,868	7.37	25,148	7.29	22,124	7.85	22,188	7.58	23,042	7.80	24,792	7.83	21,917	7.89	23,964	7.70	27,742	7.23
Per Capita Personal Income (constant 1982 $)																				
Actual																				
1980	11,848		13,135		11,766		9,880		9,995		10,960		11,715		10,988		11,693		13,364	
1987	14,879	3.42	18,231	3.37	13,393	1.98	11,518	2.37	11,648	2.38	11,979	1.33	12,988	1.55	11,281	0.35	12,517	1.01	14,803	1.54
Projected																				
1988	14,982	1.38	16,378	0.89	13,479	0.84	11,663	1.28	11,741	0.82	12,062	0.89	13,063	0.75	11,427	1.47	12,600	0.66	14,910	0.72
1995	16,730	1.77	17,838	1.27	14,824	1.21	12,667	1.47	12,903	1.41	13,401	1.59	14,419	1.46	12,746	1.65	13,937	1.52	16,134	1.17
Population (thousands)																				
Actual																				
1980	19,119		18,179		22,690		18,429		23,429		31,149		28,069		21,029		24,059		20,889	
1987	19,690	0.43	18,741	0.44	23,718	0.85	21,795	2.59	24,878	0.68	31,205	0.03	28,834	0.29	24,067	2.06	27,039	1.77	24,301	2.33
Projected																				
1988	19,848	0.80	18,878	0.72	23,930	0.89	22,218	2.06	25,020	0.58	31,337	0.42	28,742	0.38	24,119	0.22	27,352	1.16	24,750	1.85
1995	21,015	0.64	19,748	0.88	25,263	0.80	24,791	1.64	26,050	0.59	31,764	0.19	29,296	0.28	25,710	0.94	29,548	1.15	27,325	1.49
Population Age 65 and Over (thousands)																				
Actual																				
1980	2,349		2,217		2,560		2,515		2,583		3,328		3,359		2,190		2,498		2,095	
1987	2,604	1.55	2,528	1.99	2,974	2.18	3,345	4.71	3,028	2.45	3,590	1.12	3,813	1.08	2,618	2.79	2,937	2.51	2,603	3.48
Projected																				
1988	2,653	1.88	2,579	2.10	3,035	2.05	3,475	3.89	3,089	2.08	3,643	1.48	3,851	1.05	2,841	0.88	2,995	1.97	2,872	2.85
1995	2,920	1.44	2,888	1.71	3,400	1.72	4,289	3.28	3,437	1.81	3,923	0.71	3,760	0.43	2,818	0.85	3,343	1.86	3,075	2.15

Table Notes: Employment, Income, and Population

1. Detail may not add due to rounding.

2. All annual growth rates are computed on a **compound** basis.

3. Growth rates that round to zero are denoted as zero.

4. Economic and demographic data are not available for the Assistant Commissioner (International).

5. Data for IRS Regions are presented as though the alignment that became effective October 1, 1984 has existed since 1980.

6. Data for IRS Service Centers are presented as though the alignment that became effective January 1, 1989 has existed since 1980.

7. Historical economic and demographic data are not shown for those IRS Districts which have been created or subdivided since 1980 (i.e., Fort Lauderdale and Jacksonville in 1987; Houston and Austin in 1982; and Laguna Niguel, Sacramento, San Jose, Los Angeles and San Francisco in 1983).

8. Data may not add to regional totals due to inconsistencies in state-level data collection methods and/or the deletion of data for those IRS Districts which have been created or subdivided since 1980.

Table R1. Total Collections—Actual: 1980, 1987 and Tax Return Filings—Actual: 1980, 1987 and Projected: 1988, 1995—United States and IRS Regions

	United States		North Atlantic		Mid-Atlantic		Southeast		Central		Midwest		Southwest		Western		AC(International)	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Total Collections (millions of $)																		
Actual																		
1980	519,834		98,170		72,438		59,452		71,918		80,849		68,564		77,912		2,334	
1987	888,291	10.08	158,410	11.38	134,981	12.34	119,477	14.42	109,149	7.40	124,689	7.78	95,122	6.13	132,427	10.00	8,790	27.28
Total Returns (000)																		
Actual																		
1980	123,538		18,848		18,805		21,090		18,040		17,888		15,354		19,446		468	
1987	189,398	7.62	25,917	7.69	25,828	7.79	33,798	8.81	22,153	5.44	25,203	8.07	24,178	8.21	31,422	8.80	1,101	19.35
Projected																		
1988	198,346	4.72	27,395	5.70	26,862	4.92	35,441	4.87	22,943	3.57	26,321	4.44	25,443	5.23	32,785	4.34	1,156	5.04
1995	233,111	2.50	31,410	2.09	31,468	2.45	41,715	2.53	25,754	1.75	29,895	1.83	31,539	3.42	40,057	3.17	1,474	3.92
Individual Returns																		
Total (000)																		
Actual																		
1980	93,052		12,811		12,710		15,843		12,508		13,332		11,309		14,488		252	
1987	103,462	1.80	13,706	1.24	14,263	1.75	18,787	2.85	12,907	0.34	13,831	0.32	13,109	2.27	18,829	2.11	531	15.82
Projected																		
1988	107,334	3.74	14,378	4.91	14,807	3.81	19,534	3.98	13,098	2.18	14,060	3.30	13,673	4.30	17,219	3.55	558	5.04
1995	120,553	1.78	15,812	1.42	16,625	1.75	21,477	1.42	14,240	1.26	15,704	1.85	15,906	2.33	20,069	2.38	721	4.19
Form 1040 (000)																		
Actual																		
1980	55,380		7,802		7,378		8,458		7,379		8,489		8,490		9,334		229	
1987	68,545	3.40	9,389	3.36	9,243	3.61	11,418	5.00	8,524	2.22	9,559	1.60	8,554	4.54	11,572	3.42	289	3.74
Projections																		
1988	70,852	3.37	9,803	4.40	9,740	5.38	11,739	2.83	8,980	1.84	9,857	3.13	8,843	3.37	11,879	2.66	310	7.25
1995	81,680	2.18	10,981	1.72	11,318	2.31	13,041	1.58	9,857	1.61	11,248	2.01	10,732	3.05	14,293	2.90	413	4.73
Form 1040A (000)																		
Actual																		
1980	37,892		5,009		5,332		7,385		5,128		4,844		4,819		5,154		23	
1987	17,870	-7.51	2,174	-8.08	2,525	-7.52	4,203	-8.15	2,071	-9.52	1,888	-8.72	2,396	-7.19	2,592	-7.10	22	-0.45
Projected																		
1988	17,668	-1.02	2,148	-1.20	2,398	-5.14	4,244	0.97	2,039	-1.55	1,870	-0.80	2,385	-0.47	2,584	-0.30	21	-5.11
1995	19,561	1.51	2,375	1.51	2,658	1.55	4,879	1.46	2,252	1.49	2,067	1.50	2,838	1.50	2,870	1.56	26	3.83
Form 1040EZ (000)																		
Actual																		
1987	16,835		2,142		2,495		3,187		2,212		2,187		2,159		2,466		9	
Projected																		
1988	18,578	10.34	2,427	13.31	2,671	7.05	3,550	12.12	2,388	8.97	2,352	7.54	2,445	13.25	2,758	11.77	10	8.07
1995	19,039	0.38	2,458	0.17	2,654	-0.09	3,758	0.83	2,331	-0.21	2,389	0.22	2,538	0.54	2,903	0.78	11	1.87
Corporation Returns (000)																		
Actual																		
1980	2,878		478		352		464		304		384		323		374		19	
1987	3,929	8.18	829	4.59	501	8.05	729	8.14	400	4.53	479	4.52	506	8.13	583	7.24	21	1.44
Projected																		
1988	3,993	4.31	849	3.20	519	3.82	775	8.33	420	5.01	508	8.08	529	4.55	569	0.88	24	15.88
1995	5,892	8.08	807	3.47	701	5.01	1,189	7.63	555	4.80	685	4.87	819	7.84	899	8.32	38	7.13
Employment Returns (000)																		
Actual																		
1980	26,598		3,714		3,332		4,888		3,049		3,720		3,443		4,045		183	
1987	29,185	0.84	3,930	0.83	3,597	1.13	5,319	1.27	3,093	0.20	3,714	-0.02	3,747	1.28	4,569	1.85	198	0.38
Projected																		
1988	29,584	1.42	4,036	2.68	3,617	0.56	5,435	2.18	3,104	0.36	3,740	0.71	3,806	1.59	4,624	1.22	203	2.44
1995	31,389	1.41	4,395	1.24	3,765	0.59	6,108	1.77	3,177	0.33	3,870	0.50	4,510	2.64	5,360	2.27	213	0.70

Table R2. Total Collections—Actual: 1980, 1987 and Tax Return Filings—Actual: 1980, 1987 and Projected: 1988, 1995—IRS North Atlantic Region and Districts

	North Atlantic		Albany		Augusta		Boston		Brooklyn		Buffalo		Burlington		Hartford		Manhattan		Portsmouth		Providence	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Total Collections (millions of $)																						
Actual																						
1980	88,170		3,522		1,259		13,072		8,034		7,593		552		11,056		39,659		1,490		1,942	
1987	158,410	11.36	8,798	21.40	2,678	16.11	27,969	16.28	16,972	15.89	11,628	7.59	1,292	19.13	21,617	13.65	60,123	7.37	3,595	20.42	3,741	13.23
Total Returns (000)																						
Actual																						
1980	16,848		1,020		584		3,225		3,498		2,344		278		2,080		2,796		509		513	
1987	25,917	7.69	1,877	9.21	948	8.88	5,174	8.63	5,374	7.66	3,275	5.87	482	10.48	3,039	8.59	4,194	7.14	843	12.18	813	8.38
Projected																						
1988	27,395	5.70	1,766	5.33	998	5.37	5,502	6.36	5,650	5.14	3,457	5.56	509	5.51	3,219	5.93	4,435	5.74	997	5.74	882	5.93
1995	31,410	2.09	2,055	2.33	1,148	2.14	6,399	2.33	6,422	1.85	3,901	1.84	608	2.79	3,752	2.36	4,921	1.57	1,206	2.98	998	2.26
Individual Returns																						
Total (000)																						
Actual																						
1980	12,611		805		455		2,499		2,698		1,858		206		1,508		1,779		398		408	
1987	13,708	1.24	950	2.56	512	1.78	2,783	1.68	2,953	1.38	1,905	0.36	237	2.14	1,589	0.77	1,816	0.30	504	3.82	446	1.42
Projected																						
1988	14,378	4.91	994	4.59	538	4.78	2,931	4.93	3,105	5.15	1,992	4.59	248	4.75	1,688	4.93	1,907	4.98	530	5.18	468	4.80
1995	15,812	1.42	1,093	1.42	588	1.34	3,211	1.37	3,433	1.51	2,192	1.43	272	1.38	1,826	1.38	2,109	1.51	579	1.31	512	1.35
Form 1040 (000)																						
Actual																						
1980	7,602		478		230		1,460		1,748		1,143		116		909		1,086		213		218	
1987	9,389	3.38	681	5.44	309	4.88	1,843	3.74	2,151	3.30	1,351	2.60	155	4.85	1,034	1.97	1,302	2.84	308	6.38	275	3.74
Projections																						
1988	9,803	4.40	684	3.80	320	3.80	1,909	3.60	2,276	5.80	1,399	3.80	161	3.80	1,071	3.80	1,378	5.78	320	3.60	285	3.60
1995	10,981	1.72	787	1.73	359	1.73	2,140	1.73	2,546	1.70	1,589	1.73	180	1.73	1,201	1.73	1,541	1.70	356	1.73	319	1.73
Form 1040A (000)																						
Actual																						
1980	5,009		327		224		1,039		849		715		90		599		693		184		188	
1987	2,174	-8.08	135	-8.40	88	-8.01	404	-8.73	503	-8.71	252	-9.24	38	-8.32	239	-8.58	342	-7.23	81	-8.01	81	-8.11
Projected																						
1988	2,148	-1.20	133	-1.55	87	-1.55	398	-1.55	500	-0.83	249	-1.55	37	-1.55	236	-1.55	340	-0.85	80	-1.55	80	-1.55
1995	2,375	1.51	148	1.48	107	1.49	439	1.49	553	1.53	275	1.48	41	1.48	260	1.48	376	1.53	88	1.49	88	1.49
Form 1040EZ (000)																						
Actual																						
1987	2,142		155		104		547		299		302		44		316		172		115		90	
Projected																						
1988	2,427	13.31	177	14.19	119	14.19	624	14.19	329	10.18	344	14.19	50	14.19	381	14.19	189	10.18	131	14.20	103	14.19
1995	2,456	0.17	179	0.18	120	0.18	632	0.18	333	0.15	349	0.18	51	0.18	365	0.18	191	0.15	132	0.18	104	0.18
Corporation Returns (000)																						
Actual																						
1980	476		20		11		73		113		40		7		59		128		10		15	
1987	629	4.59	33	8.89	17	8.43	109	6.92	149	4.59	52	3.97	11	9.89	63	0.94	157	3.16	18	11.38	21	5.98
Projected																						
1988	649	3.20	34	3.51	19	4.43	109	0.37	156	4.17	53	2.65	12	5.82	63	1.14	184	4.97	19	3.14	21	2.43
1995	807	3.47	45	4.79	26	8.22	143	4.49	184	2.81	61	2.22	19	7.78	81	4.06	191	2.31	29	7.40	28	4.45
Employment Returns (000)																						
Actual																						
1980	3,714		204		130		623		715		419		73		452		877		109		111	
1987	3,930	0.83	237	2.30	155	2.75	720	2.22	761	0.92	434	0.51	92	3.69	426	-0.83	830	-0.76	149	5.21	127	2.09
Projected																						
1988	4,036	2.68	247	4.38	158	1.93	748	3.88	777	2.18	451	4.03	96	4.01	441	3.69	831	0.06	155	4.19	131	3.19
1995	4,385	1.24	284	2.13	163	0.42	799	0.97	901	2.28	490	1.21	112	2.41	498	1.76	823	-0.14	180	2.28	139	0.83

Table R3. Total Collections—Actual: 1980, 1987 and Tax Return Filings—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Mid-Atlantic Region and Districts

	Mid-Atlantic		Baltimore		Newark		Philadelphia		Pittsburgh		Richmond		Wilmington	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Total Collections (millions of $)														
Actual														
1980	72,436		13,718		18,527		18,234		12,035		8,589		2,358	
1987	134,981	12.34	28,048	14.93	41,507	18.06	27,744	10.13	13,352	1.58	18,785	17.03	5,543	19.33
Total Returns (000)														
Actual														
1980	16,605		2,818		4,345		3,892		2,299		2,810		340	
1987	25,828	7.78	4,363	7.07	7,014	8.77	5,983	7.87	3,234	5.81	4,498	8.56	536	8.25
Projected														
1988	26,662	4.82	4,560	4.52	7,379	5.21	6,312	5.51	3,390	4.83	4,653	3.43	568	5.85
1995	31,468	2.45	5,333	2.42	8,573	2.31	7,446	2.57	3,951	2.38	5,489	2.57	678	2.72
Individual Returns														
Total (000)														
Actual														
1980	12,710		2,222		3,275		2,998		1,815		2,151		250	
1987	14,283	1.75	2,451	1.47	3,804	2.31	3,306	1.47	1,835	0.18	2,577	2.83	291	2.38
Projected														
1988	14,607	3.81	2,538	3.47	4,005	5.29	3,410	3.14	1,891	3.10	2,664	3.36	301	3.38
1995	16,825	1.75	2,875	1.91	4,398	1.40	3,860	1.86	2,143	1.90	3,010	1.86	340	1.87
Form 1040 (000)														
Actual														
1980	7,378		1,310		1,998		1,721		1,005		1,198		145	
1987	9,243	3.61	1,635	3.54	2,471	3.38	2,117	3.29	1,180	2.48	1,853	5.40	188	4.23
Projections														
1988	9,740	5.38	1,720	5.23	2,613	5.78	2,228	5.23	1,241	5.23	1,739	5.24	198	5.23
1995	11,318	2.31	2,028	2.54	2,924	1.70	2,624	2.54	1,482	2.54	2,048	2.53	233	2.54
Form 1040A (000)														
Actual														
1980	5,332		911		1,277		1,277		810		952		105	
1987	2,525	-7.52	384	-8.27	714	-8.30	607	-7.50	343	-8.24	430	-7.84	49	-7.66
Projected														
1988	2,398	-5.14	357	-8.90	709	-0.85	565	-6.90	319	-8.90	400	-6.92	45	-8.90
1995	2,856	1.55	396	1.56	785	1.53	827	1.56	354	1.58	444	1.56	50	1.56
Form 1040EZ (000)														
Actual														
1987	2,495		432		619		582		312		495		55	
Projected														
1988	2,671	7.05	456	6.03	682	10.17	617	6.02	331	6.02	525	5.99	56	6.02
1995	2,854	-0.09	453	-0.17	688	0.15	609	-0.18	327	-0.18	518	-0.17	57	-0.18
Corporation Returns (000)														
Actual														
1980	352		55		139		87		29		52		9	
1987	501	8.05	85	7.58	185	4.71	95	5.82	40	5.35	82	8.28	14	7.78
Projected														
1988	519	3.62	66	3.33	191	3.03	97	2.07	40	1.32	88	7.31	18	8.83
1995	701	5.01	121	5.41	257	4.94	121	3.45	50	3.30	130	8.83	23	6.83
Employment Returns (000)														
Actual														
1980	3,332		558		939		743		426		595		72	
1987	3,597	1.13	633	1.83	1,002	0.96	781	0.73	428	0.07	671	1.83	81	1.75
Projected														
1988	3,617	0.58	635	0.21	1,008	0.54	787	0.81	431	0.71	674	0.46	82	1.31
1995	3,765	0.59	685	1.14	1,053	0.85	807	0.38	450	0.82	684	0.19	88	0.78

Table R4. Total Collections—Actual: 1980, 1987 and Tax Return Filings—Actual: 1980, 1987 and Projected: 1988, 1895—IRS Southeast Region and Districts

	Southeast		Atlanta		Birmingham		Columbia		Fort Lauderdale		Greensboro		Jackson		Jacksonville		Little Rock		Nashville		New Orleans	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Total Collections																						
(millions of $)																						
Actual																						
1980	59,452		8,488		4,571		3,461		---		9,832		1,978		---		2,289		6,419		8,653	
1987	119,477	14 42	19,572	16 86	8,590	12.56	6,552	12 76	15,886	---	19,489	14.03	3,717	12.55	20,043	---	4,881	16 44	12,549	13 84	8,197	3.32
Total Returns (000)																						
Actual																						
1980	21,090		2,700		1,754		1,476		---		2,988		1,113		---		1,072		2,356		1,989	
1987	33,798	8 61	4,312	6 53	2,546	6 47	2,244	7 40	5,241	---	4,649	8.08	1,553	5 65	5,540	---	1,593	6 84	3,301	5 72	2,815	5 93
Projected																						
1988	35,441	4 87	4,524	4 82	2,654	4 15	2,353	4 87	5,547	5 85	4,838	4.07	1,612	3.79	5,903	6 54	1,654	3 82	3,444	4 32	2,912	3 45
1995	41,715	2.53	5,406	2.79	2,965	1.67	2,788	2 84	6,929	3.58	5,465	1 85	1,807	1.73	7,327	3 45	1,860	1 78	3,689	1 84	3,278	1.60
Individual Returns																						
Total (000)																						
Actual																						
1980	15,843		2,073		1,360		1,146		---		2,284		844		---		801		1,853		1,512	
1987	16,787	2.65	2,543	3 24	1,535	1.84	1,345	2 45	2,339	---	2,705	2 84	817	1.22	2,853	---	881	1.43	1,966	0 67	1,603	0 86
Projected																						
1988	18,534	3.98	2,660	4 62	1,582	3 03	1,406	4 53	2,452	4 84	2,795	3 31	845	3 14	3,101	5 03	907	2 97	2,033	3 43	1,652	3 05
1995	21,477	1 42	3,032	2 00	1,674	0 83	1,803	2.00	2,611	2 09	2,952	0.80	1,004	0 99	3,542	2.03	960	0 83	2,148	0 81	1,750	0 64
Form 1040 (000)																						
Actual																						
1980	8,458		1,058		752		581		---		1,190		403		---		445		940		790	
1987	11,416	5.00	1,469	5.55	955	3 95	783	4.86	1,804	---	1,631	5.30	490	3.09	1,641	---	580	3 66	1,116	2 68	967	3.21
Projections																						
1988	11,739	2 83	1,533	4 30	967	1.35	817	4.30	1,873	4 32	1,653	1 34	496	1.34	1,921	4 32	587	1.34	1,131	1 34	980	1 35
1995	13,041	1.58	1,788	2.38	1,020	0.77	953	2 38	1,952	2 38	1,743	0.77	523	0.77	2,240	2 38	598	0.77	1,192	0 77	1,033	0.77
Form 1040A (000)																						
Actual																						
1980	7,385		1,015		608		558		---		1,094		442		---		356		913		722	
1987	4,203	-8 15	601	-5 82	364	-5.75	323	-6 00	386	---	608	-6.34	298	-4.63	538	---	202	-6.16	493	-6 57	411	-6.16
Projected																						
1988	4,244	0 97	593	-1.33	374	2.74	318	-1.33	381	-1.31	625	2.75	307	2 73	529	-1 32	207	2 75	507	2.74	422	2.74
1995	4,679	1.46	658	1.50	411	1.43	353	1 50	389	1.50	688	1 43	337	1 43	585	1 50	228	1.43	558	1.43	464	1.43
Form 1040EZ (000)																						
Actual																						
1987	3,167		472		217		238		369		465		128		575		120		357		225	
Projected																						
1988	3,550	12 12	534	13.20	241	10.91	270	13 20	416	13 22	516	10 93	142	10 90	651	13.22	133	10 93	396	10 92	250	10.91
1995	3,758	0.83	588	1.45	243	0.14	298	1.45	450	1.45	521	0.14	144	0.14	717	1.45	134	0.14	399	0.14	252	0.14
Corporation Returns (000)																						
Actual																						
1980	484		53		31		28		---		58		19		---		22		38		49	
1987	729	8 14	87	6 96	40	4 44	42	7 31	173	---	84	6.47	28	4 80	125	---	29	4 62	50	4 57	73	7 01
Projected																						
1988	775	6.33	81	5.38	42	5 59	43	3 28	192	5.21	89	5 88	27	5.54	143	14 28	32	7.45	52	5 23	73	-0.15
1995	1,186	7.63	134	6 83	80	5.86	62	6.16	280	7 86	129	6 30	38	6 00	260	11.74	45	6.22	76	6.49	105	6 34
Employment Returns (000)																						
Actual																						
1980	4,688		622		403		333		---		877		279		---		257		507		470	
1987	5,319	1.27	707	1.98	412	0.34	366	1.42	800	---	741	1.38	268	-0.55	785	---	256	-0.08	516	0 26	466	-0 13
Projected																						
1988	5,435	2 16	716	1.24	416	1 46	373	1.78	825	3 01	758	2 21	270	0.70	827	5.37	259	1.12	526	1.87	464	-0.46
1995	6,108	1.77	801	1.69	431	0.44	404	1.20	1,014	3 29	805	0 90	282	0.65	1,041	3 69	273	0.77	582	0 98	494	0.95

Table R5. Total Collections—Actual: 1980, 1987 and Tax Return Filings—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Central Region and Districts

	Central		Cincinnati		Cleveland		Detroit		Indianapolis		Louisville		Parkersburg	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Total Collections (millions of $)														
Actual														
1980	71,816		10,486		17,690		25,097		10,820		6,062		1,963	
1987	109,149	7.40	18,603	6.33	23,500	4.69	39,666	8.42	17,799	9.68	8,466	5.66	2,896	6.78
Total Returns (000)														
Actual														
1980	16,040		2,480		3,371		4,614		2,634		1,886		853	
1987	22,153	5.44	3,389	5.23	4,583	5.13	8,831	5.39	3,989	5.83	2,413	6.14	1,149	4.95
Projected														
1988	22,943	3.57	3,516	3.77	4,761	3.88	6,669	3.59	4,102	2.63	2,507	3.89	1,198	3.44
1995	25,754	1.75	3,926	1.87	5,314	1.66	7,717	1.76	4,604	1.75	2,650	1.88	1,343	1.66
Individual Returns														
Total (000)														
Actual														
1980	12,506		1,936		2,828		3,756		2,221		1,297		667	
1987	12,807	0.34	1,989	0.24	2,808	-0.11	3,880	0.46	2,305	0.55	1,361	0.92	863	-0.09
Projected														
1988	13,086	2.16	2,013	2.24	2,865	2.16	3,970	2.32	2,354	2.10	1,409	2.00	675	1.83
1995	14,240	1.26	2,188	1.23	2,900	1.26	4,320	1.26	2,560	1.25	1,536	1.31	738	1.29
Form 1040 (000)														
Actual														
1980	7,379		1,081		1,551		2,356		1,261		786		321	
1987	8,524	2.22	1,267	2.46	1,734	1.69	2,713	2.15	1,471	2.12	936	2.70	403	3.98
Projections														
1988	8,680	1.84	1,290	1.84	1,766	1.84	2,763	1.84	1,498	1.83	954	1.64	411	1.64
1995	9,657	1.61	1,435	1.61	1,964	1.61	3,074	1.61	1,888	1.61	1,061	1.61	457	1.81
Form 1040A (000)														
Actual														
1980	5,126		655		1,077		1,401		940		510		348	
1987	2,071	-8.52	331	-8.75	423	-8.67	466	-9.33	432	-7.72	241	-7.52	158	-7.76
Projectad														
1988	2,036	-1.55	326	-1.55	417	-1.55	478	-1.55	425	-1.54	236	-1.55	155	-1.55
1995	2,252	1.49	360	1.49	460	1.49	528	1.49	470	1.49	263	1.49	172	1.49
Form 1040EZ (000)														
Actual														
1987	2,212		371		451		882		403		203		102	
Projected														
1988	2,388	8.97	397	6.97	482	6.97	729	6.97	431	6.99	216	6.97	110	8.97
1995	2,331	-0.21	391	-0.21	475	-0.21	718	-0.21	424	-0.21	214	-0.21	108	-0.21
Corporation Returns (000)														
Actual														
1980	304		42		67		92		56		31		16	
1987	400	4.53	53	3.72	62	3.24	131	5.90	73	4.28	43	5.84	19	2.44
Projected														
1988	420	5.01	55	3.85	63	2.06	136	4.45	80	10.12	48	8.63	18	1.87
1995	555	4.60	71	4.16	100	2.89	168	5.45	108	4.89	64	5.51	24	3.87
Employment Returns (000)														
Actual														
1980	3,049		455		635		671		532		370		187	
1987	3,093	0.20	452	-0.10	625	-0.22	828	0.81	544	0.33	372	0.09	173	-1.09
Projected														
1988	3,104	0.36	451	-0.11	630	0.71	826	-0.07	550	1.05	374	0.44	173	0.31
1995	3,177	0.33	454	0.06	649	0.44	843	0.28	574	0.64	379	0.21	177	0.31

Table R6. Total Collections—Actual: 1980, 1987 and Tax Return Filings—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Midwest Region and Districts

	Midwest		Aberdeen		Chicago		Des Moines		Fargo		Helena		Milwaukee		Omaha		St. Louis		St. Paul		Springfield	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Total Collections																						
(millions of $)																						
Actual																						
1980	80,849		742		30,579		4,496		839		934		9,880		3,462		13,034		11,674		5,410	
1987	124,889	7.78	1,242	9.62	44,760	8.83	6,330	5.83	1,295	7.59	1,537	9.22	14,231	6.72	5,176	7.07	21,239	8.99	20,332	10.60	8,736	8.79
Total Returns (000)																						
Actual																						
1980	17,688		364		4,749		1,857		377		476		2,615		911		2,813		2,268		1,638	
1987	25,203	8.07	559	6.49	6,636	5.68	2,257	5.17	555	6.72	981	8.14	3,699	5.92	1,296	6.05	3,915	7.12	3,353	6.84	2,250	5.34
Projected																						
1988	26,321	4.44	564	4.53	6,967	4.95	2,336	3.62	580	4.63	710	4.24	3,863	4.42	1,354	4.46	4,092	4.52	3,484	3.91	2,350	4.42
1995	29,895	1.63	686	2.55	7,898	1.91	2,575	1.44	703	3.02	849	2.81	4,263	1.46	1,569	2.26	4,610	1.81	3,969	1.99	2,571	1.34
Individual Returns																						
Total (000)																						
Actual																						
1980	13,332		277		3,891		1,200		268		329		1,979		654		1,971		1,717		1,245	
1987	13,831	0.32	285	0.41	3,709	0.07	1,151	-0.59	273	0.25	331	0.06	2,033	0.39	668	0.31	2,123	1.10	1,821	0.87	1,237	-0.09
Projected																						
1988	14,080	3.30	296	3.85	3,823	3.09	1,199	3.30	283	3.82	343	3.67	2,101	3.33	694	3.84	2,191	3.17	1,988	3.52	1,275	3.10
1995	15,704	1.65	358	2.90	4,214	1.46	1,317	1.54	342	2.95	416	3.03	2,314	1.45	836	2.91	2,420	1.50	2,082	1.46	1,408	1.49
Form 1040 (000)																						
Actual																						
1980	8,469		180		2,225		850		181		226		1,243		432		1,216		1,153		781	
1987	9,558	1.80	202	1.71	2,435	1.35	886	0.80	199	1.36	250	1.49	1,398	1.78	477	1.49	1,502	3.35	1,360	2.57	850	1.25
Projections																						
1988	9,857	3.13	207	2.44	2,513	3.21	914	3.24	204	2.44	256	2.44	1,443	3.23	489	2.44	1,550	3.23	1,404	3.25	877	3.22
1995	11,248	2.01	261	3.75	2,827	1.78	1,028	1.78	257	3.75	323	3.75	1,623	1.78	617	3.75	1,744	1.78	1,579	1.78	987	1.78
Form 1040A (000)																						
Actual																						
1980	4,844		96		1,468		351		87		103		736		222		755		565		463	
1987	1,888	-8.72	36	-8.85	650	-7.95	116	-9.56	33	-8.94	36	-9.33	270	-9.05	87	-8.98	303	-8.55	155	-10.37	199	-8.16
Projected																						
1988	1,870	-0.80	39	2.08	643	-1.14	115	-1.11	33	2.08	36	2.09	267	-1.13	88	2.08	299	-1.13	153	-1.12	197	-1.14
1995	2,087	1.50	43	1.45	711	1.51	127	1.51	37	1.45	40	1.45	295	1.51	98	1.45	331	1.51	169	1.51	217	1.51
Form 1040EZ (000)																						
Actual																						
1987	2,187		45		823		149		42		45		385		104		318		307		186	
Projected																						
1988	2,352	7.54	50	11.75	887	7.02	160	7.05	47	11.76	50	11.76	391	7.04	116	11.75	341	7.03	329	7.05	201	7.02
1995	2,369	0.22	52	0.49	876	0.19	162	0.19	48	0.49	52	0.49	398	0.19	120	0.49	345	0.19	333	0.19	204	0.18
Corporation Returns (000)																						
Actual																						
1990	364		8		99		36		8		11		53		22		55		49		22	
1987	479	4.52	9	2.69	143	6.25	42	2.52	9	2.73	15	4.21	68	3.22	27	3.46	73	4.67	67	4.97	29	4.24
Projected																						
1988	508	6.08	10	8.42	151	8.04	45	6.64	10	5.90	15	3.73	68	3.54	29	6.46	78	6.35	72	8.36	30	5.44
1995	685	4.97	14	5.92	192	3.81	63	5.93	14	6.41	21	5.55	90	4.59	43	6.89	104	4.79	104	6.36	40	4.43
Employment Returns (000)																						
Actual																						
1980	3,720		99		859		390		99		123		543		223		575		465		344	
1987	3,714	-0.02	98	-0.15	876	0.26	346	-1.63	98	-0.13	126	0.32	558	0.39	214	-0.54	585	0.26	490	0.78	322	-0.91
Projected																						
1988	3,740	0.71	98	0.42	895	2.18	331	-4.09	98	0.36	125	-0.53	564	1.08	215	0.14	598	0.36	500	1.98	325	0.92
1995	3,870	0.50	105	0.97	948	0.84	355	1.01	107	1.26	135	1.08	569	0.12	222	0.51	593	0.14	519	0.54	318	-0.34

Table R7. Total Collections—Actual: 1980, 1987 and Tax Return Filings—Actual: 1980, 1988 and Projected: 1988, 1995—IRS Southwest Region and Districts

	Southwest		Albuquerque		Austin		Cheyenne		Dallas		Denver		Houston		Oklahoma City		Phoenix		Salt Lake City		Wichita	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Total Collections (millions of $)																						
Actual																						
1980	66,564		1,444		---		851		15,650		7,784		---		8,287		3,770		1,688		5,002	
1987	95,122	8.13	2,888	12.32	11,451	---	978	2.09	24,490	8.07	13,050	9.66	15,728	---	8,233	-0.11	8,158	16.56	3,367	11.46	8,979	5.64
Total Returns (000)																						
Actual																						
1980	15,354		657		---		281		3,268		1,898		---		1,582		1,427		707		1,343	
1987	24,178	8.21	1,040	8.33	3,741	---	388	5.32	5,383	9.18	2,708	8.48	2,951	---	2,335	7.07	2,608	11.82	1,043	8.79	2,006	7.05
Projected																						
1988	25,443	5.23	1,091	4.83	3,848	5.48	403	4.45	5,657	5.49	2,839	4.93	3,101	5.10	2,450	4.95	2,748	5.30	1,104	5.83	2,105	4.95
1995	31,538	3.42	1,331	3.15	4,797	3.08	511	3.64	6,641	2.98	3,818	3.92	4,018	4.23	2,944	2.88	3,588	4.36	1,437	4.31	2,451	2.35
Individual Returns																						
Total (000)																						
Actual																						
1980	11,308		503		---		199		2,365		1,244		---		1,143		1,051		528		972	
1987	13,109	2.27	594	2.57	2,131	---	196	-0.25	2,875	3.08	1,429	2.13	1,623	---	1,242	1.23	1,383	4.84	598	1.80	1,029	0.83
Projected																						
1988	13,873	4.30	620	4.34	2,225	4.41	203	3.80	3,006	4.53	1,485	3.90	1,694	4.38	1,296	4.39	1,448	3.81	621	3.97	1,076	4.64
1995	15,908	2.33	711	2.10	2,534	1.88	245	2.92	3,445	2.09	1,788	2.92	1,944	2.10	1,501	2.28	1,741	2.91	748	2.81	1,249	2.30
Form 1040 (000)																						
Actual																						
1980	6,480		270		---		128		1,301		801		---		709		858		325		628	
1987	8,554	4.54	384	4.95	1,164	---	140	1.32	1,771	5.18	1,031	4.10	1,002	---	866	3.58	994	7.28	430	4.59	772	3.28
Projections																						
1988	8,843	3.37	378	3.77	1,208	3.75	144	2.44	1,836	3.78	1,056	2.44	1,040	3.77	920	3.81	1,015	2.44	440	2.44	801	3.82
1995	10,732	3.05	451	2.75	1,440	2.75	182	3.75	2,192	2.75	1,334	3.75	1,241	2.75	1,087	2.75	1,288	3.75	556	3.75	956	2.75
Form 1040A (000)																						
Actual																						
1980	4,818		233		---		71		1,084		442		---		434		383		202		344	
1987	2,398	-7.18	132	-6.17	556	---	28	-8.08	599	-6.24	187	-8.88	352	---	181	-7.99	188	-7.50	87	-8.53	117	-9.43
Projected																						
1988	2,385	-0.47	131	-1.08	552	-1.08	28	2.08	593	-1.05	171	2.08	348	-1.06	189	-1.03	190	2.08	89	2.08	118	-1.01
1995	2,636	1.50	145	1.51	610	1.51	29	1.45	658	1.51	188	1.45	385	1.51	208	1.51	210	1.45	78	1.45	128	1.51
Form 1040EZ (000)																						
Actual																						
1987	2,159		98		410		30		505		231		288		185		212		101		140	
Projected																						
1988	2,445	13.25	111	13.78	466	13.78	33	11.78	575	13.79	258	11.78	306	13.78	187	13.82	237	11.75	112	11.78	159	13.84
1995	2,538	0.54	115	0.58	484	0.56	34	0.48	598	0.56	288	0.48	318	0.56	195	0.56	245	0.48	118	0.48	166	0.56
Corporation Returns (000)																						
Actual																						
1980	323		13		---		7		67		42		---		35		29		17		28	
1987	506	8.13	18	8.41	83	---	8	2.57	110	9.25	66	8.88	71	---	51	8.47	55	12.41	24	5.80	37	4.70
Projected																						
1988	529	4.55	19	4.27	85	3.81	9	2.48	118	4.92	71	5.44	74	3.94	54	5.58	57	3.29	25	4.54	38	5.34
1995	819	7.84	30	8.07	104	8.42	13	8.59	171	6.81	113	8.28	113	7.58	81	7.13	98	10.02	40	8.81	58	7.14
Employment Returns (000)																						
Actual																						
1980	3,443		153		---		74		782		386		---		359		278		150		322	
1987	3,747	1.28	164	1.06	574	---	70	-0.73	859	1.41	434	1.79	440	---	381	0.08	367	4.49	157	0.88	320	-0.10
Projected																						
1988	3,806	1.59	166	1.29	582	1.34	71	0.91	863	0.42	443	2.10	450	2.28	365	1.18	381	3.88	162	2.88	323	1.12
1995	4,510	2.84	186	1.87	659	1.91	78	1.65	810	0.78	567	3.99	678	7.24	372	0.25	532	5.88	208	4.05	320	-0.17

Table R8. Total Collections—Actual: 1980, 1986 and Tax Return Filings—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Western Region and Districts

	Western		Anchorage		Boise		Honolulu		Laguna Niguel		Las Vegas		Los Angeles		Portland		Sacramento		San Francisco		San Jose		Seattle	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Total Collections (millions of $)																								
Actual																								
1980	77,812		893		1,479		1,870		---		1,772		---		4,341		---		---		---		8,803	
1987	132,427	10.00	1,514	9.93	2,210	7.08	2,809	8.74	21,490	---	3,502	13.94	35,462	---	7,166	9.30	9,921	---	19,548	---	15,024	---	13,781	7.88
Total Returns (000)																								
Actual																								
1980	18,446		242		485		544		---		491		---		1,859		---		---		---		2,369	
1987	31,422	8.60	408	9.85	881	8.08	874	8.89	8,322	---	812	9.85	5,802	---	2,243	5.03	3,744	---	2,663	---	4,182	---	3,703	8.05
Projected																								
1988	32,785	4.34	418	3.12	718	3.90	914	4.46	8,598	4.38	859	5.84	8,042	4.14	2,348	4.84	3,910	4.49	2,785	4.59	4,312	3.59	3,880	4.78
1995	40,057	3.17	531	3.84	874	3.11	1,140	3.53	8,223	3.52	1,125	4.42	7,114	2.53	2,852	3.07	4,869	3.87	3,229	2.28	5,138	2.74	4,661	3.81
Individual Returns																								
Total (000)																								
Actual																								
1980	14,488		177		355		413		---		383		---		1,212		---		---		---		1,742	
1987	18,629	2.11	229	4.18	365	0.42	485	2.49	3,434	---	408	4.03	3,099	---	1,138	-0.90	1,894	---	1,354	---	2,225	---	1,943	1.65
Projected																								
1988	17,219	3.55	235	2.90	378	3.81	503	3.74	3,557	3.58	485	4.05	3,190	2.84	1,180	3.85	1,965	3.77	1,405	3.77	2,299	3.33	2,022	4.06
1995	20,066	2.38	291	3.38	458	2.99	574	2.03	4,072	2.07	578	2.75	3,857	2.09	1,419	2.90	2,366	2.93	1,604	2.02	2,627	2.04	2,420	2.81
Form 1040 (000)																								
Actual																								
1980	8,334		118		232		258		---		225		---		743		---		---		---		1,058	
1987	11,572	3.42	198	9.46	269	2.31	327	3.81	2,419	---	306	5.10	2,158	---	806	1.22	1,382	---	906	---	1,500	---	1,322	3.60
Projections																								
1988	11,878	2.66	201	2.44	278	2.44	337	2.83	2,488	2.85	313	2.43	2,218	2.72	828	2.44	1,395	2.44	931	2.83	1,541	2.79	1,354	2.43
1995	14,293	2.90	254	3.75	349	3.75	383	2.41	2,908	2.41	398	3.75	2,591	2.41	1,042	3.75	1,781	3.75	1,088	2.41	1,801	2.41	1,710	3.75
Form 1040A (000)																								
Actual																								
1980	5,154		59		123		154		---		138		---		489		---		---		---		666	
1987	2,592	-7.10	21	-9.24	48	-8.72	74	-7.44	503	---	76	-8.44	590	---	151	-9.68	252	---	209	---	398	---	271	-8.85
Projected																								
1988	2,584	-0.30	21	2.08	49	2.08	73	-1.38	496	-1.34	77	2.07	581	-1.46	155	2.08	257	2.08	206	-1.38	392	-1.43	278	2.08
1995	2,870	1.58	23	1.45	54	1.45	81	1.85	553	1.85	95	1.45	648	1.85	170	1.45	283	1.45	230	1.85	437	1.85	304	1.45
Form 1040EZ (000)																								
Actual																								
1987	2,466		12		49		83		512		84		350		179		280		240		327		350	
Projected																								
1988	2,758	11.77	13	11.76	53	11.75	93	11.83	573	11.85	84	11.75	391	11.71	200	11.75	313	11.78	268	11.82	365	11.75	392	11.75
1995	2,903	0.76	14	0.49	55	0.49	99	0.93	610	0.94	97	0.49	417	0.93	206	0.49	324	0.49	286	0.93	369	0.93	405	0.49
Corporation Returns (000)																								
Actual																								
1980	374		5		11		15		---		11		---		34		---		---		---		45	
1987	563	7.24	9	10.21	14	4.08	21	5.11	111	---	19	9.45	127	---	42	3.41	51	---	42	---	83	---	87	8.78
Projected																								
1988	568	0.88	9	1.64	15	5.28	21	1.66	111	-0.23	20	4.59	126	-0.46	42	0.47	50	-1.34	43	2.27	84	2.49	88	2.54
1995	899	8.32	12	5.96	21	8.05	35	9.66	183	9.38	34	10.15	195	7.97	81	9.41	91	8.84	85	7.66	108	9.22	105	7.65
Employment Returns (000)																								
Actual																								
1980	4,045		49		119		107		---		97		---		351		---		---		---		521	
1987	4,568	1.85	66	4.97	120	0.18	121	1.83	847	---	113	2.40	877	---	349	-0.08	537	---	378	---	605	---	557	1.00
Projected																								
1988	4,624	1.22	83	-4.55	118	-1.23	123	1.78	853	0.70	118	5.14	880	0.31	382	3.82	548	2.02	378	0.53	607	0.31	574	2.93
1995	5,360	2.27	73	2.21	132	1.58	166	4.87	1,062	3.51	183	5.32	826	0.75	423	2.42	667	3.12	394	0.83	657	1.18	696	3.06

Table R9. Total Collections—Actual: 1980, 1987 and Tax Return Filings—Actual: 1980, 1987 and Projected: 1988, 1995—IRS Service Centers

	Andover		Brookhaven		Philadelphia		Atlanta		Memphis		Cincinnati		Kansas City		Austin		Ogden		Fresno	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Total Collections (millions of $)																				
Actual																				
1980	52,151		87,220		46,873		34,279		37,710		61,297		63,198		58,936		37,626		80,544	
1987	101,647	13.56	118,602	10.92	81,478	10.85	74,361	18.70	73,503	13.58	91,350	7.00	95,298	7.26	77,766	4.56	72,885	13.39	84,334	7.97
Total Returns (000)																				
Actual																				
1980	10,553		10,839		9,917		12,702		13,512		10,666		13,272		14,301		13,766		14,210	
1987	19,416	12.00	18,697	8.40	15,175	7.57	21,550	9.95	17,849	4.59	18,211	10.11	18,870	6.03	20,309	6.00	21,142	7.66	19,978	5.80
Projected																				
1988	20,498	5.56	17,791	5.29	15,942	5.05	22,709	5.36	18,503	3.68	18,890	3.73	19,724	4.53	21,324	5.00	22,166	4.84	20,800	4.11
1995	20,620	0.09	20,178	1.92	24,101	7.31	22,872	0.10	18,712	0.93	25,483	4.99	25,556	4.22	22,221	0.80	27,832	3.65	24,537	2.57
Individual Returns																				
Total (000)																				
Actual																				
1980	8,135		7,750		7,536		9,393		10,472		8,322		10,087		10,600		10,117		10,839	
1987	10,758	4.60	8,573	1.52	8,413	1.66	11,631	3.40	10,435	-0.05	10,501	3.74	10,252	0.23	11,098	0.87	11,204	1.54	10,597	-0.06
Projected																				
1988	11,252	4.60	9,018	5.17	8,696	3.36	12,147	4.43	10,753	3.05	10,732	2.18	10,578	3.18	11,570	4.26	11,836	3.85	10,854	3.37
1995	10,271	-1.25	9,940	1.46	12,948	8.99	10,989	-1.36	10,468	-0.35	14,240	4.67	13,755	4.29	11,384	-0.23	14,003	2.91	12,533	2.06
Form 1040 (000)																				
Actual																				
1980	5,921		4,832		4,410		5,094		5,055		6,098		6,318		5,368		5,308		6,960	
1987	7,296	3.32	5,924	3.23	5,409	3.23	7,142	5.75	6,430	3.89	7,053	2.24	7,070	1.71	6,826	4.15	7,984	7.20	7,311	0.72
Projections																				
1988	7,553	3.53	6,267	5.78	5,698	5.34	7,407	3.71	6,588	2.46	7,183	1.84	7,298	3.22	7,185	3.44	8,179	2.44	7,515	2.79
1995	6,894	-1.25	7,012	1.70	8,805	7.79	6,932	-0.92	6,109	-1.04	9,657	4.92	8,788	4.87	7,378	0.42	10,327	3.75	8,782	2.41
Form 1040A (000)																				
Actual																				
1980	3,932		2,918		3,126		4,300		4,254		4,169		3,771		4,433		3,092		3,879	
1987	1,484	-8.90	1,559	-6.65	1,404	-7.87	2,469	-6.02	2,195	-7.02	1,839	-8.68	1,536	-8.46	2,380	-6.66	1,459	-7.55	1,773	-7.40
Projected																				
1988	1,461	-1.51	1,549	-0.85	1,307	-6.87	2,463	-0.24	2,184	-0.03	1,814	-1.55	1,520	-1.14	2,351	-0.40	1,489	2.08	1,748	-1.40
1995	1,445	-0.18	1,715	1.53	1,887	6.44	1,993	-2.82	2,668	3.45	2,252	5.85	1,950	3.10	2,133	-1.32	1,640	1.45	1,950	1.85
Form 1040EZ (000)																				
Actual																				
1987	1,979		1,090		1,390		2,000		1,839		1,809		1,644		1,811		1,761		1,513	
Projected																				
1988	2,236	13.08	1,201	10.15	1,474	6.02	2,258	12.81	2,000	8.75	1,935	6.97	1,760	7.04	2,054	13.42	1,968	11.78	1,691	11.77
1995	1,932	-1.95	1,213	0.15	1,875	4.66	2,064	-1.22	1,694	-2.18	2,331	2.92	2,117	2.90	1,875	-1.24	2,036	0.49	1,902	0.83
Corporation Returns (000)																				
Actual																				
1980	235		380		180		298		250		201		266		297		301		267	
1987	390	9.42	491	4.18	255	5.96	492	9.32	318	3.88	327	8.87	352	4.83	424	8.10	417	5.50	362	5.09
Projected																				
1988	402	3.00	511	4.00	265	3.85	529	7.42	341	7.26	340	3.88	372	5.68	440	3.81	430	3.21	364	0.55
1995	432	1.09	632	3.36	481	11.84	735	5.56	453	4.72	555	9.05	593	8.46	557	3.80	870	7.95	584	8.64
Employment Returns (000)																				
Actual																				
1980	2,588		2,530		1,892		2,977		2,569		2,517		2,711		3,023		2,572		2,909	
1987	2,829	1.33	2,593	0.36	2,121	0.93	3,339	1.74	2,729	0.89	2,549	0.18	2,687	-0.13	3,184	0.76	3,308	4.08	2,825	-0.41
Projected																				
1988	2,928	3.47	2,616	0.86	2,136	0.78	3,429	2.68	2,767	1.36	2,554	0.22	2,703	0.60	3,213	0.91	3,378	2.12	2,840	0.52
1995	2,601	-1.30	2,778	0.89	2,825	5.26	3,280	-0.70	2,848	0.42	3,177	3.48	3,301	3.16	3,124	-0.40	4,110	3.10	3,205	1.84

Table R10. Federal Tax Deposits and Withholding and Information Documents—Actual: 1980, 1987 and Projected: 1988, 1994—United States and IRS Service Centers

	United States		Andover		Brookhaven		Philadelphia		Atlanta		Memphis		Cincinnati		Kansas City		Austin		Ogden		Fresno	
	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)	Level	Annual Growth Rate (%)
Federal Tax Deposits (000)																						
Actual																						
1980	56,214		5,147		5,779		4,039		5,484		5,831		4,821		8,349		9,518		8,126		8,341	
1987	72,464	4.13	8,062	8.09	7,084	3.23	5,177	4.03	7,894	6.35	8,547	2.32	7,038	8.57	7,303	2.15	7,607	2.38	8,983	2.00	8,769	5.47
Projected																						
1988	75,307	3.92	8,522	5.71	7,187	1.45	5,484	5.54	8,547	8.27	8,775	3.48	7,429	5.56	7,626	4.42	7,384	-2.93	7,248	3.79	8,125	4.06
1994	93,628	4.05	8,024	-0.97	8,359	2.72	8,554	9.43	9,753	2.35	7,851	2.65	10,216	6.25	10,488	8.25	8,293	2.05	10,729	8.00	11,360	4.08
Grand Total—Withholding and Information Documents (000)																						
Actual																						
1980	563,587		5,221		8,818		4,237		4,251		8,828		5,082		9,728		8,712		5,940		3,261	
1987	872,893	7.84	5,343	0.33	7,148	0.89	5,853	4.77	7,007	9.26	5,885	-2.03	4,038	-2.93	7,230	-3.67	8,353	-3.87	9,578	8.74	10,066	29.81
Projected																						
1988	905,262	3.71	5,082	-4.88	6,778	-5.20	5,433	-3.89	8,524	-6.89	5,303	-6.72	3,675	-8.99	8,758	-6.58	5,738	-9.88	8,958	-6.47	9,504	-5.58
1994	1,192,384	5.29	4,519	-1.85	7,379	1.48	7,287	5.72	5,120	-3.59	4,859	-1.40	4,608	5.14	7,955	2.98	4,521	-3.53	9,454	0.93	10,010	0.89
Withholding Documents (000)																						
Actual																						
1980	188,745		0		0		0		0		0		0		0		0		0		0	
1987	213,107	1.84	0		0		0		0		0		0		0		0		0		0	
Projected																						
1988	219,918	3.20	0		0		0		0		0		0		0		0		0		0	
1994	287,010	5.08	0		0		0		0		0		0		0		0		0		0	
Information Documents Total (000)																						
Actual																						
1980	374,842		5,221		8,818		4,237		4,251		8,828		5,082		9,726		8,712		5,940		3,261	
1987	880,538	10.89	5,343	0.33	7,148	0.89	5,853	4.77	7,007	9.26	5,885	-2.03	4,038	-2.93	7,230	-3.67	8,353	-3.87	9,578	8.74	10,066	29.81
Projected																						
1988	685,348	3.78	5,082	-4.88	6,778	-5.20	5,433	-3.89	8,524	-6.89	5,303	-6.72	3,675	-8.99	8,758	-6.58	5,738	-9.88	8,958	-6.47	9,504	-5.58
1994	905,097	5.34	4,519	-1.85	7,379	1.48	7,287	5.72	5,120	-3.59	4,859	-1.40	4,609	5.14	7,955	2.98	4,521	-3.53	9,454	0.93	10,010	0.89
Magnetic Tape (000)																						
Actual																						
1980	304,008		0		0		0		0		0		0		0		0		0		0	
1987	592,437	13.55	0		0		0		0		0		0		0		0		0		0	
Projected																						
1988	621,599	4.92	0		0		0		0		0		0		0		0		0		0	
1994	838,168	5.75	0		0		0		0		0		0		0		0		0		0	
Paper (000)																						
Actual																						
1980	70,834		5,221		8,818		4,238		4,251		8,828		5,082		9,726		8,712		5,940		3,261	
1987	88,099	-0.55	5,343	0.33	7,148	0.89	5,853	4.77	7,007	8.26	5,885	-2.03	4,038	-2.93	7,230	-3.67	8,353	-3.87	9,578	8.74	10,066	29.81
Projected																						
1988	63,747	-6.38	5,082	-4.88	6,778	-5.20	5,433	-3.89	8,524	-6.89	5,303	-6.72	3,675	-8.99	8,758	-6.58	5,738	-9.88	8,958	-6.47	9,504	-5.58
1994	85,931	0.57	4,519	-1.85	7,379	1.48	7,287	5.72	5,120	-3.58	4,859	-1.40	4,609	5.14	7,955	2.98	4,521	-3.53	9,454	0.93	10,010	0.89

Table Notes: Collections, Tax Returns, Information Documents, and Federal Tax Deposits

1. Detail may not add due to rounding.

2. All annual growth rates are computed on a **compound** basis.

3. Growth rates that round to zero are denoted as zero.

4. Form 1040EZ was introduced in filing year 1983. Therefore, no 1980 data or 1980-1987 growth rates for Form 1040EZ appear in the tables. In addition, the introduction of Form 1040EZ has significantly reduced the number of Forms 1040A filed since 1983.

5. Total Collections are on a fiscal year basis, while all other data are presented on a calendar year basis. The source of the Total Collections data is Table 1 of the Commissioner's Annual Report, 1980 and 1987, respectively.

6. U.S. Total Collections differ from the sum of Total Collections for IRS Regions since the U.S. figures include collections that are **undistributed** to the Regions. For a more complete explanation of the components of the Total Collections category, see Table 1 of the Commissioner's Annual Report.

7. Data for IRS Regions are presented as though the regional alignment that became effective October 1, 1984 has existed since 1980.

8. Data for IRS Service Centers for 1980, 1987 and 1988 are presented as though the alignment that became effective January 1, 1986 has existed since 1980. Data for IRS Service Centers for 1995 are presented using the alignment that became effective January 1, 1989.

9. Historical return data are not shown for those IRS Districts which were created or subdivided after 1980 (i.e., Fort Lauderdale and Jacksonville in 1987; Houston and Austin in 1982; and Laguna Niguel, Sacramento, San Jose, Los Angeles, and San Francisco in 1983).

10. Return data may not add to regional totals due to the deletion of historical data for those IRS Districts which have been created or subdivided since 1980.

11. Total Returns consist of the following forms:

o Individual	Forms 1040, 1040A, 1040C, 1040EZ (1987, 1988, and 1995 only), 1040NR, 1040PR, 1040SS, 1042 (1980 only)
o Estimated Tax	Forms 1040ES (entities for 1980, vouchers for 1987, 1988, and 1995)
o Fiduciary	Form 1041

- o Fiduciary Estimated Tax — Form 1041ES (1987, 1988 and 1995 only)
- o Partnership — Form 1065
- o Corporation — Forms 1120, 1120A (1987, 1988, and 1995 only), 1120F, 1120H, 1120POL, 1120S, and other 1120's.
- o Estate — Forms 706, 706NA
- o Gift — Form 709
- o Employment — Forms 940, 940PR, 941, 941E, 941PR, 941SS, 942, 942PR, 943, 943PR, CT-1, 941M (1980 only), and CT-2 (1980 only).
- o Form 1042
- o Exempt Organization — Forms 990, 900C, 990PF, 990T, 4720, and 5227.
- o Employee Plans — Forms 5500, 5500C and 5500R. Also filed in 1980: 5500G and 5500K. Also filed in 1987, 1988 and 1995: 5500EZ.
- o Alcohol, Tobacco and Firearms — Years 1980 and 1987: Forms 11 and 5000.24 (Alcohol and Tobacco Excise). Also filed in year 1980: Forms 7, 8, 4705, 4706, 4707, and 4708.
- o Excise — Forms 11B (1980 only), 11C, 720, 720M (1980 only), 730, 2290, and 4638 (1980 only).
- o Selected Supplemental Documents — Forms 1040X, 1120X, 2688, 4868, and 7004. Also filed in years 1987, 1988 and 1995: Form 1041A. Also filed in year 1980: Forms 2438, 990AR, 5300 and 7005.
- o Non Master File — Years 1987, 1988 and 1995: Forms CT-2, 941M, 990BL, and 1120-DISC/FSC.

12. Since Form 1040ES filings are presented on an entity basis in 1980 and on a voucher basis for 1987, 1988 and 1995, growth rates in the Total Returns category for 1980-1987 are not comparable to the 1987-1988 or the 1988-1995 intervals.

13. Information Documents consist of the following: Forms 1099DIV, 1099INT, 1099MISC, 1099OID, 1099PATR, 1099R, Schedule K1 and foreign information returns. Also filed in years 1987, 1988 and 1995: Forms 1098, 1099A, 1099B, 1099G and 5498. Also projected in 1995: Form 1099S.

14. All information documents on magnetic tape are processed in Martinsburg Computing Center and, therefore, are shown only under the United States category. Service Centers process only paper information documents.

15. 1980 Service Center data for paper information documents will not add to the U.S. total for paper information documents since data for 10,200 Schedules K1 is not available by Service Center. As a result, 1980 Service Center data will also not add to U.S. data for the total information document category (i.e., paper documents plus magnetic tape) or for the grand total category (i.e., information plus withholding documents).

16. Withholding documents consist of the following: Forms W2, W2P and W2G.

17. Under the CAWR Act, the Social Security Administration provides the IRS with magnetic tape of the data from withholding documents. IRS processing of these magnetic tapes is performed at the Martinsburg Computing Center and, therefore, withholding documents are shown only for the U.S. (and not for Service Centers).

Publications Available on Return Projections

Document Number	Title
6149	Number of Returns to be Filed, Districts (Rev. 11-88)
6186	Number of Returns to be Filed, United States, Regions and Service Center Areas (Rev. 11-88)
6187	Forms 1040, 1040A and 1040EZ by Full-Paid, Other-Than-Full-Paid and Refunds, United States and Service Center Areas (Rev. 5-88) and (Rev. 8-88)
6235	Number of Examination Class Returns to be Filed by District: Individual, Partnership, Corporation and Estate (Rev. 11-88)
6292	Fiscal Year Projections of Returns to be Filed, United States (Rev. 4-88) and (Rev. 8-88)
6961	Information and Withholding Documents, United States and Service Center Areas (Rev. 4-88)

These publications may be obtained by writing to:

Internal Revenue Service
Research Division
PFR:R
1111 Constitution Avenue, N.W.
Washington, D.C. 20224

Attn: Projections & Forecasting Group

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